Norwegian University of Life Sciences
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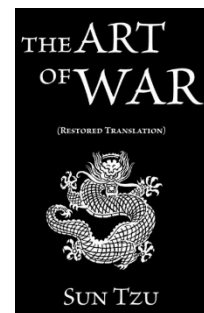# Innovation Strategy for B2B Mobile Apps: a Value-centric Approach

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Preface

Business apps are quietly revolutionizing the business world. The big buzz is all about the B2C apps within gaming and social media, but B2B/Business apps and enterprise apps (B2E) are picking up the pace. But the competition within the app world is increasingly fierce, and the overall success rate low. Nevertheless, the profit possibilities making Business and Enterprise apps are by far more promising regarding profit for app owners and entrepreneurs, if succeeded. These questions started my quest for exploring if all those apps with low adoption rates could be explained by failing creating real *user value*. Or is it just poorly performed marketing tactics? These reflections shaped the research subject: How Value-centric Innovation Strategies can enhance Product-Life-Cycles for B2B/Business apps.

"Know your purpose, vision, mission and the message you want to send and how you will send it. Prior analysis brings victory; little or no analysis is foretelling defeat"
Quote: Sun-Tzu 544 - 496 BC (The Art of War)

Summary

The purpose of this empirical master study is to examine how innovation strategy emphasizing Value-centric innovation strategies can help to enhance mobile & tablet B2B/Business app Product-Life-Cycles. Furthermore, analyzing the strategically aspects and how these impact; value creation & capturing, marketing, disruption, diffusion, user adoptions and app profit and profitability.

Research and literature focusing on the app stores (app ecosystems) (Boudreau 2012; Bresnahan et al. 2013; Dell'Era et al. 2013; Gans 2012; Holzer and Ondrus 2011; Karhu et al. 2014) are increasingly well researched, but existing research is commonly not necessary anchored within the context or the nature of innovation *combined* with entrepreneurial needs or characteristics, neither grounded within such theories or frameworks.

An extensive literature search were performed and a holistic literature review are created to explore value-centric innovation theories and frameworks adaptable for B2B/Business apps combined with recent app related research. Four highly cited value-centric articles and frameworks works as foundation for how to value innovate: Value Innovation (Kim and Mauborgne 1999), Value Based Innovation (Fernandes and Martins 2011), Blue-Ocean-Strategy (Kim and Mauborgne 2005a; 2005b) and Transient Advantage (McGrath 2013).

This empirical master research aim to add some contributions for future academic research within innovation strategy adaptable for B2B/Business apps from the app developer, app owner and from an entrepreneurial perspective. Fixed mixed methods with deductive and descriptive research design analyzing existing innovation and app theory, and explorative and inductive research design with use of one holistic web survey targeting app experts.

As a result, within the research scope is also a Value-centric Innovation Strategy Model proposed, pursuing bridging the gap between business strategy and innovation strategy tailored to facilitate managerial operations.

The research conclusions propose how to create sound Value-centric innovation strategies for B2B/Business apps and the *activities* and strategically *assessments* needed to be addressed for enhanced and profitable app Product-Life-Cycles.

Contents

1. Introduction

In today's *hyper*-competitive app marketplace, simply creating a great app isn't enough. The majority of published apps within the top 3 app stores are failing hence diffusion and user adoptions growth, lacking quality adoptions and earn poorly retention rates which result in low revenues and unsustainable profitability. The majority of successful apps are from a very few existing incumbents that are making the big money.

The competition for attention and visibility are increasingly fierce. A massive number of new launches each month increasingly creates a difficult environment for app owners and app entrepreneurs hence their ability for sound strategically managerial thinking and execution within innovation management. Low pricing and Free apps are common disruptive strategies (Opposite to technology disruption), and are squeezing profit margins and increasing marketing costs.

From a historical perspective, business and marketing activities have focused on success in the product marketplace by exploring the physical attributes and characteristics of products and services such as; quantity, quality, functionality, availability, accessibility, delivery, price and customer support.

The attributes and uniqueness of differentiators is also changing; In the 1970s, the differentiator was quality or functionality; in the 1990s it has been brand equity and price; in the early 2000s, it has been information, service, and delivery. Today, it is all about creating customers' emotional Values interacting with the brand (Passion brands), creating and maintaining engagement with the brand community via social media communities focusing on superior lifespan customer experience. To be able to create and deliver these promises, businesses must focus on interaction configuration (and feasibility), customer response capacity and closely monitor and analyze Customer Engagement Behaviors (CEBs) such as product retention, word of mouth, blogging, ratings and reviews. These activity based strategies and tactics are creating competitive advantages.

More recently, product and marketing managers have shifted their emphasis to Value innovate both focusing on customer experience operationalized with Customer Value

Management. Value innovation excel an opportunity-driven, customer centric and user-added value approach, and is all about creating a leap of value for the product or service, regardless of radical or incremental technological innovations, with the objective of creating a unique value curve strategically analyzing both the innovation value and price value perception of potential customers or users. But within hyper-speed velocity markets, competitive advantages get outdated or rapidly disrupted; sustainable competitive advantages is not possible to sustain, transient advantages is the way to compete in hyper-paced and hyper-flux marketing conditions.

To be able to Value innovate, product strategists and innovation managers must focus on and emphasizing; user-centric and value-centric innovation strategies and operational processes to support these objectives.

All these attributes revolves around Value-centric innovation approaches, and function as foundation for analyzing Value-centric innovation strategies for B2B/business apps within this master research scope. One important objective is delivering distinct value innovation enabling high differentiation with unique value propositions.

Different strategically approaches gives different possibilities and limitations within; project scope, costs, marketing, diffusion and user adoption tactics. But until they launch, how can they know what their challenges will be? B2B app owners and app entrepreneurs must prepare for the unknown: new technologies, new app creator frameworks and services, rapidly changing business and competitive requirements.

This means that they need the ability to adjust to changing project requirements or market directions through flexible Innovation Management and Product-Life-Cycle Management. They need capabilities to balance app innovation features with user demands and byer's value alignment. In addition they need to identify the best possible business model and revenue stream models to meet their business and marketing goals. To address these elements they need a sound Value-centric app innovation strategy.

But connecting innovation value with desirable target users especially for app entrepreneurs and late entries within the app stores massive offerings are difficult and increasingly costly hence promotion and marketing tactics.

2. Research purpose, context and objectives

The research purpose is to analyze how an innovation strategy emphasizing Value-centric innovation strategies can play a key role to enhance B2B/Business app Product-Life-Cycles.

Analyzing innovation strategy in the context of i.e.; innovation types, levels and complexity, First-Mover VS. Follower strategies, value-centric innovation attributes, profit margins and profitability. Within this context and in correlation with some of these areas belong to the inductive and explorative research design. These perspectives are underrepresented within the p.t. available scholar literature, but are highly relevant also for app owners and app entrepreneurs for enhanced managerial operations and actionable strategies and tactics.

Several identified challenges and obstacles are identified through the literature review:

Value creation related research findings:

A more <u>attractive</u> selection of apps creating more demand and a "market pull" for more funding of apps. Diversity and increased number of app developers does not lead to increased or decreased app <u>innovation levels</u>, but rather qualitatively transforms the nature and *sources* of innovation (Boudreau 2012).

User adoption speed related research findings:

Launching and promoting time limited (Trials) Free <u>full versions</u> rather than feature limited Free versions of paid Apps is a better strategy hence user adoption <u>speed</u> (Arora 2014).

Early reviews are far more effective regarding diffusion *speed* and new user adoptions than reviews later in the app lifespan. Monitoring is crucial (Hoon et al. 2013).

A very high number of new products fail within mobile ecosystems hence diffusion *speed* and user adoption *growth* after they are launched. Addressed core reasons of failing are poorly alignment of; customers value (High innovation complexity), quality level and *insufficient* competitive advantages and *inaccurate* launches (Dell'Era et al. 2013).

App disruption related research findings:

Within the App stores of Apple Store (iOS) and Google Play (Android) business and communication apps have the longest median half-life (50% of total lifespan) with just 6 months! After reached half-life many of the app adoptions decline fast (Flurry 2014).

Failing to monetize and make a reasonable profit and sustainable profitability.

The app stores lowers technical entry and distribution costs for diverse innovative mobile apps, but the marketing costs are rapidly growing. There is a high rate of turnover (churn) in app success within app stores (Bresnahan et al. 2013).

"The overall app economy, including all revenue sources not just the app stores, is still growing but the revenues are highly concentrated. At the top end of the revenue scale there are just 1.6% of developers with apps earning more than $500k per month, collectively they earn multiples of the other 98.4% combined" (Vision Mobile Q3 2014).

Developing B2B/Enterprise apps are far more lucrative choice hence revenue levels and profitability:

"43% of enterprise app developers make more than $10K per month versus 19% of consumer app developers reaching the same revenue level" (Vision Mobile 2015). Total revenues are unsustainable for more than 50% of developers (ibid).

Another proof of the unparalleled dynamics of the app stores is revealed; to get your moment of glory and be placed at the top 10 list for B2C apps in Apple's US App store you will need as much as above 80.000 downloads already the first 24 hours after your launch according to TradeMode the largest app marketing platform in the world (Source: http://venturebeat.com/2013/06/04/how-96000-can-buy-you-a-top-10-ranking-in-the-u-s-app-store/). Visibility among the masses has been an increasingly real challenge also for the rising number of B2B apps.

"Everyone" claim to offer "new innovative apps" with high value! The term *Value* is commonly used, but in different settings, differently analyzed and interpreted. This research aim to assemble the eclectic sources to better understand how to *value innovate*.

One illustrating example is that *Creative Destruction* (Schumpeter 1942; Kim and Mauborgne 1999; Waldman 2010) reduce company lifespans; on the S&P500 index average lifespan was 61 years in 1958, 25 years by 1980 and shortened to 18 years by 2011 (Perry 2014). Contrary, average lifespan for a consumer app is **23** days and *compete* against *millions* of others for attention and visibility inside the "small" shop window hence Top lists (App Stores), and needs *85,000 new customers* the *first 24 hours* to earn a place at the Top 10 list

for maximal visibility that power speed of diffusion and user adoptions. Business apps within app stores achieve on average half-life of only *6 months* (Flurry 2014).

We have moved from the industrial era, further to the knowledge economy era into today's *recommendation economy* (Anderson 2009), (Also called the Google era and the era of transparency), where *speed* and access to ubiquitous information and offerings from a high range of product and service varieties.

The present economy of flux and peer-to-peer recommendations via the web and social media, is shaping the *reputation economy* (Anderson 2009), where *Free* flourish and is a powerful *disruptive* business or value creation & capture model and disruptive price strategy. The forces of market dynamics, market flux, speed of massive offerings, competitiveness and disruptiveness is historical unparalleled within the Google Era. The App era is a rapidly growing infant within the reputation economy.

To sum it up; based on the facts presented above, there are four areas this research pursue to analyze which represent big challenges or problems for many app owners and app entrepreneurs:

- Failing to create real user Value (Value creation/User value alignment) (See objective 1 formulation)
- Failing to create visibility among the masses of apps, resulting in poorly or slow diffusion and user adoption (See objective 2 formulation)
- Failing to create disruptive innovations to enhance competitive advantages (See objective 3 formulation)
- Failing to monetize and make sustainable profitability (See objective 4 formulation)

To analyze these 4 core challenges, the following 4 research objectives are defined:

- Objective 1: How can mobile app owners design Value-centric Innovation strategies to create optimal value creation?
- Objective 2: What strategically Value-centric Innovation approaches and capabilities can app owners use to create high user adoption?
- Objective 3: How can app owners develop their Value-centric Innovation strategies to create disruption in their market?
- Objective 4: How can mobile app owners use Value-centric Innovation strategies to increase app profit and empower profitability?

These insights form the basis for the last research objective (5):

Objective 5: Designing a proposed Value-centric Innovation Strategy model that focus on and elevate strategic thinking and execution for value innovation, tailored for the nature and dynamics for creating, launching and maintaining B2B/Business apps.

The purpose with the model is to create a model for both further academic explorative research, and that it is tailored for innovation management and Product-Life-Cycle Management processes for B2B/business app owners and entrepreneurs, additionally pursuing an actionable and operational (Strategy-To-Execution) entrepreneurial design for managerial adoption.

2.1 Research question

Based on the research purpose, context and defined objectives, the following research question is decided on:

 "How can a Value-centric Innovation Strategy enhance B2B App Product-Life-Cycle?"

2.2 Research methodology

Fixed mixed methods are the research methodology decided on. Fixed mixed methods design are mixed methods studies where the use of quantitative and qualitative methods is predetermined and planned from the start of the research process, opposite to emergent mixed methods designs where the use of mixed methods arises due to issues that develop during the process of conducting the research. Emergent mixed methods designs generally occur when a second approach (quantitative or qualitative) is added after the study is underway because one method is found to be inadequate (Creswell 2013). *"Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration"* (Creswell 2013 p. 4).

The fixed mixed methods will be performed concurrently with use of one web survey. The main reason for choosing fixed mixed methods is that this design will possibly enhance the completeness of analyzing the collected research data, and provide more comprehensive insights helping with clarification about the relationships among data variables, research

objectives and research findings (ibid). The research utilizes a qualitative priority where a greater emphasis is placed on the qualitative methods and the quantitative methods are used in a secondary role during the data analysis and overall interpretation. Generalization of the research data findings is for example not an objective in this research, but the overall interpretation between the qualitative and quantitative data, see figure 1.

Fixed **mixed** research design
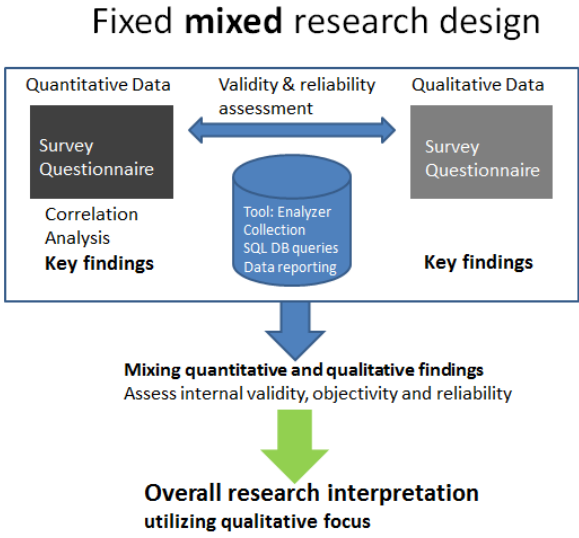
Figure 1. Quantitative and Qualitative Data in a fixed mixed methods study (Creswell 2013).

An independent level of interaction occurs when the quantitative and qualitative data sets are implemented so that they are independent from the other; that is, the two data sets are distinct and the researcher keeps the quantitative and qualitative research questions, data collection, and data analysis separate, and mixes the two data sets when drawing conclusions during the overall interpretation (Creswell 2013). These characteristics are also widely analyzed by Hurmerinta-Peltomäki and Nummela (2006) among a diversity of mixed researchers. They argue that it is legitimate for researchers to decide on a qualitative interpretation of mixed methods, and to analyze results both quantitative and qualitative data concurrently, emphasizing an overall qualitative research approach (Ibid).

2.3 Research design

The research design takes both a deductive and inductive approach:

1. Identify: Existing knowledge about the identified research objectives and topics (Deductive)

2. Explore: Real world dilemmas with use of mixed methods with own empirical web survey (Inductive)

3. Describe: Findings from web survey emphasizing qualitative research approach (Descriptive)

4. Explain: Findings from web survey emphasizing qualitative research approach (Explorative)

5. Assess/Evaluate: Match key findings related to existing literature and research (Deductive)

The research design will further take both a descriptive and explorative research design with concurrently use of fixed mixed methods for this empirical research. The research approach focuses on deductive approach for the selected innovation theories and frameworks, and the web survey focuses on an inductive approach with own research soughing out *what's* and *how's* rather than emphasize the *why's*.

Since the mixed research methods chosen utilize qualitative focus and interpretation techniques is the following definition by Norman Denzin and Yvonna Lincoln chosen to match my research approach: "*Qualitative research is multi method in its focus, involving an interpretive naturalistic approach to its subject matter. This means that qualitative researches study things in their natural settings. Attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them*" (Gall et al. 2003 p. 24). The research pursues to analyze the following areas related to the research objectives (Ibid):

- Attitudes/Opinions/Perceptions
- Strategically knowledge
- Values
- Culturally shared meaning
- Processes within app strategy and innovation management

2.4 Visualization of the research data analysis design
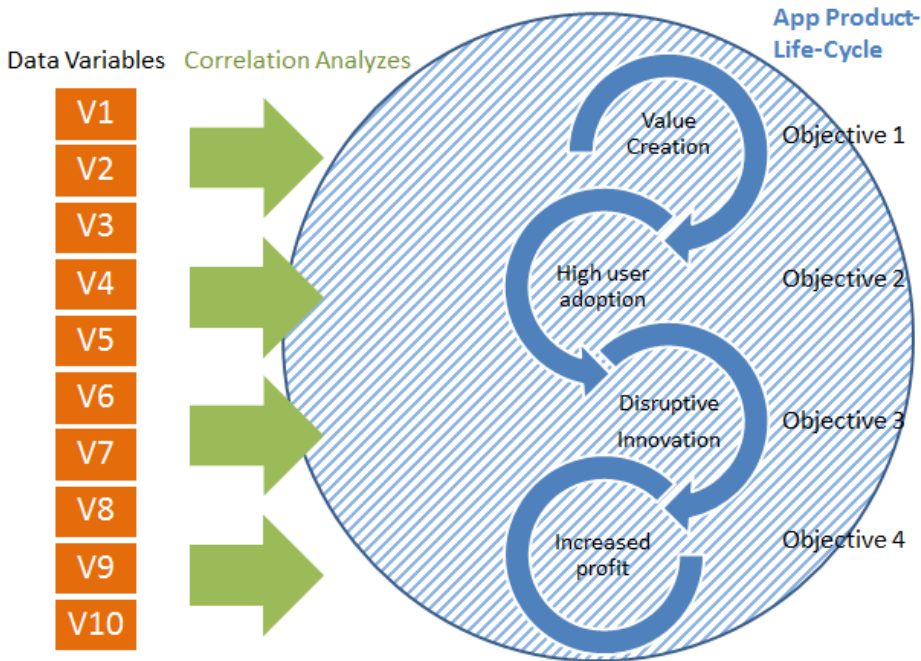
Figure 2. Research data analysis conceptual design.

2.5 Research process stages

This master research process followed the following stages, presented in figure 2.

1
- Identifying & defining research theme & industry
- Identifying & defining research purpose, objectives and research question

2
- Defining research conceptualization and context
- Defining research methodology, design and variables
- Defining research target respondents and survey questionnaire logic

3
- Academic article search and quality & relevancy assessment > selection
- Writing: Theory > Data collection > Data analysis > Evaluate validity and reliability > Discussion of key findings > Clarify findings > Conclusions

Figure 3. Master research process stages.

2.6 Literature sources for designing data variables and questionnaire (Table 1)

Data Variables (V) – Labeling	Literature and research sources used for designing data variables and questionnaire
V1: Value-centric App Innovation & business challenges	(Bharadwaj et al. 2013; Bresnahan et al. 2013; Nordström and Ridderstråle 2002; Osterwalder and Pigneur 2010; Zott et al. 2011
V2: Value-centric App Innovation as key factor to create competitive advantage – levels & complexity	(Bharadwaj et al. 2013; Boudreau 2012; Byers et al. 2011; Dell'Era et al. 2013; McGrath 2013; McKeown 2008; Wirtz et al. 2010)
V3: Radical VS. incremental app innovations	(Byers et al. 2011; Smith 2010; McKeown 2008)
V4: First-Mover VS. Follower approach	(Boudreau 2012; Shankar et al. 1998; Smith 2010; Figueiredo and Kyle 2005)
V5: App business model & revenue stream models	(Arora 2014; Bresnahan et al. 2013; Dell'Era et al. 2013; Hughes 2011; Vision Mobile 2014; 2015)
V6: Tacit knowledge & Absorptive capacity	(Smith 2010)
V7: App Innovation Management	(Campos et al. 2014; Pikkarainen et al. 2011; Figueiredo and Kyle 2005; Berkhout et al. 2006)
V8: Code framework & platform choices	(Bresnahan et al. 2013; Heitkötter et al. 2013; Holzer and Ondrus 2011; Hughes 2011; Karhu et al. 2014)
V9: Marketing, disruption, diffusion & user adoption	(Arora 2014; Christensen et al. 2003; Fernandes and Martins 2011; Giglierano et al. 2011; Hughes 2011; Wessel and Christensen 2012)
V10: Success criteria's, Economical & app measurements	(Byers et al. 2011; Distimo (2012; 2013a; 2013b); Giglierano et al. 2011; Hoon et al. 2013; Hughes 2011; Kim and Mauborgne 2005a; 2005b; Trademob (2013; 2014); Verhoef and Lemon 2013)

Table 1. Literature sources for designing data variables and web questionnaire

2.7 Questionnaire quantitative data

The questionnaire is designed with 10 variables and 57 questions distributed across the research objectives documented in appendix C1.

2.8 Crossed Data Queries (Quantitative data)

To analyze cause and effects, and correlations between variables/questions related to the research objectives are some crossed data queries performed with the survey tool Enalyzer. The selected variables and crossed data queries is documented in appendix C2 table C2-CQ.

2.9 Open-Ended Questions (Qualitative data)

To analyze the qualitative research data, 9 open-ended questions are distributed across the research objectives, presented in appendix C3-OEQ.

2.10 Questionnaire design

The research uses a structured cloud based web questionnaire. The design of the questionnaire used combinations of; multiple choice questions, Likert scales, statements, closed-ended questions and open-ended questions that aimed at drawing out individual experiences and perceptions (Gall et al. 2003).

I decided on to build an in-depth questionnaire with a target expert group which are ideal method for collecting phenomenological data (ibid). The built in survey logic regarding the chronology of quantitative and qualitative questions, pursued to avoid survey tiredness.

To avoid misinterpretation of questions are the use of innovation theory and app world acronyms wordings reduced to a minimum, when used are short explanations and definitions added for the respondent's convenience and to pursue a higher degree of research validity and reliability.

You will find the original questions and responses in appendix C1, C2 and C3 for verification of validity, reliability and objectivity.

2.10.1 Excluded topics

What topics are excluded in this paper? Creativity processes are important in any business and strategy development. To create competitive advantage within app development, creating routines for creativity processes demands managerial focus and skills.

Systems for brainstorming and lateral thinking putting creativity as a strong force to innovate are well elaborated in my term paper: *"How to empower software development with creative thinking and innovation?"* (Haugestad 2013). That comprehensive term paper (25 ECTS) mainly focused on internal strengths related to general software innovation management, I will therefore in this paper not analyze theory or elaborate in depth about creativity or brainstorming processes as standalone topics. Internal analyzes and assessments via frameworks such as VRIN and VRIO (Barney 1991; 1995) are therefore also excluded.

The majority of existing scholar articles is about understanding the mechanisms for app ecosystems such as Apple Store and Google Play, mostly from an economic or social perspective. Where innovation and mobile apps are researched, it is also more about

process innovation or business model innovation within banking, healthcare, music industry etc. Other perspectives are from an industry evolution perspective, marketing and consumers (B2C) perspective.

2.10.2 Planning research validity

Research validity refers to how well a scientific test or piece of research actually measures what it sets out to, or how well it reflects the reality it claims to represent (Gall et al. 2003; Haugestad 2013).

Content validity

Content validity occurs when the research provides adequate coverage of the subject being studied. This includes measuring the right research purpose and objectives as well as having an adequate data collection sample. Samples should be both large enough and be taken for appropriate target groups. Therefor is different app experts with different positions target. Content validity is related very closely to good research design. A high content validity question covers more of what is sought (Gall et al. 2003; Haugestad 2013).

Internal validity

Another important factor related to validity is internal validity. Internal validity occurs when it can be concluded that there is a causal relationship or correlation between the data variables being researched. A danger is that changes might be caused by other factors. For example when new insights are manifested as findings from open-ended questions, this can result in fine-tuning or adding new more interesting research objectives. Internal validity is related to the research design (Gall et al. 2003; Haugestad 2013).

Threats to validity

The following identified threats to this master research validity are (Gall et al. 2003):

- Inappropriate selection of constructs (Mixed research design)
- Insufficient data collected to make valid conclusions (Quantitative research data)
- Measurement done in too few contexts (Overall mixed research data interpretation)
- Inadequate selection of target subjects (Qualitative research data)
- Complex interaction across constructs (Mixed data interpretation)

- Respondents giving biased answers (Qualitative open question research data)

Objectivity

To avoid biases in the research process, designing the questionnaire and analyzing and present the key findings focusing on objectivity is important. The idea of objectivity assumes that a truth or independent reality exists outside of any investigation or observation. The researcher's task in this model is to uncover this reality without contaminating it in any way. In qualitative research, a realistic aim is for the researcher to remain impartial; that is, to be impartial to the outcome of the research, to acknowledge their own preconceptions and to operate in as unbiased and value-free way as possible (Gall et al. 2003; Haugestad 2013).

Reliability

The focus in academic research to pursue reliability is well known. Within quantitative research it is more easily and accepted to verify the reliability of results and findings than within qualitative research. "*As Kirk and Miller argue; Qualitative researchers can no longer afford to beg the issue of reliability. While the forte of field research will always lie in its capability to sort out the validity of propositions, its results (reasonably) go ignored minus attention to reliability to document his or her procedure*" (Silverman 2011 p. 20).

A full version of all raw data is attached in the appendix C1, C2 and C3 in order to allow the reader to formulate his or her own hunches about the research perspectives, interpretations, themes, findings and conclusions and be able to dive into all details and open ended answers, and not only the key findings and overall interpretation presented in this paper.

"*We are not faced, then, with a stark choice between words and numbers, or even between precise data. Furthermore, our decisions about what level of precision is appropriate in relation to any particular claim should depend on the nature of what we are trying to describe, on the likely accuracy of our descriptions, on our purposes, and on the resources available to us; not on ideological commitment to one methodological paradigm or another*" (Silverman 2011 p. 21-22).

2.10.3 Validity and reliability evaluation

With the fixed mixed research design and the survey tool Enalyzer helped pursuing the research objectives and research question. The survey questionnaire was designed with some similar core research topics incorporated both in the quantitative and qualitative sections to be able to check if the respondents input responses were consistent. With Enalyzer's data collection and advanced report builder, additional crossed data queries between the data variables were enabled.

This allowed to not only look at survey participate responses to open-ended questions but also insights based on closed-ended questions in aggregate.

Evaluating both the quality of the questionnaire logic, the mixed methods design, respondent input quality and survey data results concludes that a high degree of internal validity occured, and that the reliability between quantitative and qualitative results give acceptable quality matched to the research purpose and defined objectives.

The research validity is achieved within the research scope. The aspect of reliability within this regime, hence a very few respondents, the reliability checks are done matching the consistency between responses across the quantitative and qualitative data sets, and between the descriptive and explorative research findings. There are minor inconsistent responses but not significant to reduce the quality of the conclusions.

Selection of respondents

My criteria's for the target respondents to participate were the following aspects:

- Experience from current or past B2B/business mobile app development projects
- Positions and roles like: Team leader, Development Manager, Product Manager, Project Manager, Tech lead, Marketing Manager, Product strategist or advisor, Innovation Manager or similar

Pre-selection is used to target professionals (Experts) with hands-on experience from B2B mobile app development projects and to target persons with high relevancy insights, positions and work areas (Gall, Gall & Borg 2003). Among the participants there are variations of small, medium and a few bigger app development companies, and small app start-ups included. They all create B2B/Business or Enterprise apps. To market, attract and

acquire respondents to my research, I used both twitter with app related hashtags (I.e. #B2B #app #innovation #strategy) and LinkedIn mobile app developer related groups to market my research, directing prospect respondents to a web landing page for further reading about the research purpose and objectives. **16** targeted app professionals agreed in advance to participate to the survey.

I managed to get **9** respondents to fulfill the web survey, documented in appendix B, figure B1. Participants were from different geographical locations; Norway, UK and US. They possess variable positions related to app strategy and app development, ensuring that different expert opinions and views were taken into account to pursue covering the research purpose and objectives.

E-Mail distribution of the web survey

The survey invitation (Appendix A) included four key components:

- Introduced the survey and research purpose & objectives
- Explained why I need the respondents and my return of favor (Fast access to the finished research)
- Brief overview of the survey topics and content
- Estimated the length (25 to 35 minutes) of the survey to balance fulfilment time expectations

Multi-gadget access to the web survey

The web survey tool Enalyzer is built with responsive design (Appendix B, figure B2) to fit all kinds of gadgets; PC, MAC, SmartPhones and Tablets. This should increase the response speed, with convenient of use and "in hand" possibility in addition to desktop computer usage.

Email Reminders

Email survey reminders have been proven to boost response rates. Using a survey system (Enalyzer) that can send reminders to individuals who have not yet completed my survey is a huge time saver. I sent 2 reminders to "no reply" participants and managed to get a few more participants to take the survey.

Data storage of web survey and data handling

Personal or company information of any kind is <u>not</u> included in the survey or questionnaire and therefore not included in the data set, processing or data storage. The web survey tool Enalyzer provides the respondents totally anonymous for each other and also for the researcher if wanted. The researcher setup the e-mail addresses for distributing, but when running reports, it is not possible to see who answered what. A research content check has also been done with NSD's checklist web form! This research follows the Norwegian requirements from NSD and sending an application is therefore not required. (Source: NSD http://www.nsd.uib.no/personvern/meldeplikt/meldeplikttest).

2.10.4 Literature review

Literature search

Literature search has been done with; Bibsys search, ScienceDirect, Google Scholar and Google advanced search. The objectives were to find both high impact literature and theory within innovation, disruption, diffusion and user adoption and to find *fresh* and *relevant* articles within mobile app development combined with app innovation strategy related to the research purpose and objectives.

This empirical research take an eclectic approach applied into the literature review and research design. The initial multiple diverse Google Scholar advanced searches for "*innovation strategy for mobile apps*" gave above 100.000 search results. Several advanced, refined and combined searches later within different databases to narrow the results down to find high relevancy articles to support the purpose, context and objectives of this research, resulted in approximately 100 articles. Out of these, the summaries was explored, resulting in in-depth reading of 60 articles. Out of these 60 articles, approximately 20 was decided on to include within the research scope of this master thesis.

In addition to these searches, the rest of the included high impact articles was recommended from the internal master thesis supervisor; Arsalan Nisar Shah.

Despite the rush the last years within many academic institutions to create and offer more or updated courses within innovation and entrepreneurship, the existing base of scholar articles created by innovation or entrepreneurship scholars are very few compared to those created within the i.e. mass of economics or social related courses and disciplines. The majority of existing scholar articles about mobile apps focus on understanding mobile apps from respective topics such as; economic, marketing or consumer behavior (B2C), software development, app store ecosystems, social or cultural or process innovation within industries such as i.e.: banking, healthcare and retail.

Many older classic innovation and business strategy theories are worked out before the Internet arrived, and long time before mobile apps arrived. Old (Before Internet arrived for businesses in 1991, or App Store launched by Apple in 2008) business and innovation theories are either inadequate or outdated to be adopted for app entrepreneurs and app businesses, or they are partly adoptive.

A few examples of such inadequate theories or frameworks for understanding the purpose of this master research are; VRIN/VRIO (Barney 1991; 1995), Value Chain optimization, Porter's Five Forces, the traditional view on network effects and economic scaling and scarcity, sustainable profitability and sustainable competitive advantages. The majority of these theories and frameworks used for decades were designed to understand the nature of brick & mortar businesses and/or large global enterprises and their competitiveness, disruptiveness and innovativeness.

The scholar and academic world need to assess, revise and possibly need to create some new theories and frameworks that are more fitted for topics such as patterns and mechanisms of; app diffusion (Including outside app stores), app disruption, radical apps VS. Incremental apps, app innovation levels and complexity and the consequences for marketing and social media and viral marketing, user adoption growth, all in the context of entrepreneurial aspects and profitability.

This point of view, that existing theories and frameworks used for decades to understand the mechanisms used in the industrial era are ineffective or inadequate for understanding mechanisms and characteristics within app ecosystems and apps outside the app stores, are supported and stated within several of the selected scholar articles (Arora 2014; Bharadwaj et al. 2013; Boudreau 2012; Bresnahan et al. 2013; Dell'Era et al. 2013).

Both classical and resent published scholar articles, whitepapers and survey results from leading mobile app industry analyst companies are included to get facts, recent developments and trends from the present (2013 to 2015) app development and app marketing world. Many advanced searches combining the topics were performed; resulting in the selected scholar articles which support the research purpose, context and objectives.

2.10.5 Literature introduction

The following literature review includes the research of **30** academic articles, additionally a few selected curriculum books and mobile app industry reports are included (Overview of innovation related literature in table 2a, and app related literature in table 2b. The literature is explored related to better understand B2B mobile app innovation strategy variables for the topics; recent business model developments and digital business models, mobile business models and revenue stream models, digital value creation & digital value capture models, Value Based Innovation, First-mover (Pioneers) and Follower (Late entry) strategies, innovation types, innovation levels & complexity, Value Based Innovation strategy as tool to create competitive advantage and differentiation, Blue Ocean Strategy (BOS), marketing, disruption, diffusion and user adoption, Product-Life-Cycle Management, Customer Value Management (CVM), entry and exit tactics, app monetization models and profitability.

This master research aim to make a contribution to the debate about the reasons and benefits deploying an app innovation strategy to enhance app Product-Life-Cycles rather than a "Do it first/Launch first" approach such as prototype first or LEAN (without a defined innovation strategy). App owners and product or innovation managers are confronted with strategically considerations within; digital business and revenue capture models, programming coding technology mix and paths, mobile platforms, distribution channels and platforms (App stores or outside) innovation, marketing, Social Media Marketing and digital branding, payback/ROI, break-even and cash-flow analyses, business and app

measurements, price tactics and superior value propositions; not only app conceptualization, app prototypes, app design/UI, business logic or UX.

To examine the relationships between creating Value-centric Innovation strategies and what impact the research objectives and topics; value creation, high growth user adoption, creating disruption or defending disruption and pursuing increased app profit (Value capturing), a holistic article review were performed to better understand these variables and characteristics adaptable for understanding the app world.

Master research subjects	Relevant findings	References
Different business models and characteristics	Modern business models revolves around *customer-focused & customer driven* value creation and unique value propositions. Models evolve from a *resource* based view to *competitive advantages* based on firm *activities*.	(Zott et al. 2011)
Business model Innovation & planning	Business model generation as *planning tool* for Innovative business & revenue streams; differentiation, competitive advantages, scaling and high growth. Identified models; Multi-Sided platforms, Multi-Sided markets, BOS, lock-ins, bait and hook, Long Tail, Freemium and "unbundled" (Asymmetric) models targeting several *segmented* markets.	(Osterwalder & Pigneur 2010)
Funky Business: Emotional value and creative passion brands	To empower business lifespan and competitive advantages creation of recurring serial monopolies are suggested as sound business strategy. Additionally, *customer centric* focus on creating businesses based on *emotional Values* to create *passion* brands. *Speed* of innovation and utilization of *cyclic innovation* and *re-inventions*.	(Nordström and Ridderstråle 2002)
Transient advantage VS. Sustainable competitive advantage	The era of long periods of *sustainable competitive advantage* is over. The characteristics of a *transient advantage* strategically approach is; to stay ahead of the pack, businesses need to *constantly explore* and create *many* new strategically *initiatives at once*. A systematically *Strategy-to-Execution* (S2E) process is a critical success criteria.	(McGrath 2013)
Free as business model	In the "reputation economy", *Free* is a powerful *disruptive* business or value creation & capture model and price strategy. (Free apps with diversified monetization models are highly present within the app stores)	(Anderson 2009)
Asymmetric business models	*Asymmetric* business models creates new offerings *totally independent of each other* and creates new revenue streams for the company and *reduce risks* and increase potential *growth* and *profitability*.	(Anderson 2009)
Digital business models and digital Value Creation & Capture models	*Speed* of coordinated product launches, and *speed* of strategically decision making are identified success criteria's. Digital business strategy excel; *user centric* innovation, *user-added* value & *cooperative* value generation (I.e.: API strategies). High *absorptive capacity*, agility and high *quality content* delivery are other key success criteria's.	(Bharadwaj et al. 2013)
Digital Value Creation & competitive advantages	*Digital* communication and *Social Media* technologies provide new ways of optimized interaction orientation using the following attributes to create *competitive advantages*; customer centricity (User value focused & driven), interaction *configuration* (and feasibility), customer *response capacity* and *cooperative* value generation.	(Wirtz et al. 2010)
Value Innovation	*Value Innovation* as a strategy *equally* emphasize both the *innovation value* and the mass of *buyer's Value alignment*. Value Innovation focus on creating *radical innovation value* (Not <u>necessary</u> *radical technical* innovation) delivered with a *price tag accessible to the mass of byers* within target market(s).	(Kim and Mauborgne 1999)
Value Based Innovation	*Product Value* is determined of two important variables; levels of *performance* (Features and functionalities) and the *price level*. The *price level* is linked to the buyer's *value perception* and *value alignment*. Creating unique product *differentiation*, product *varieties* and a *unique value curve* are core objectives and success criteria's.	(Fernandes and Martins 2011)
Innovation Value analysis	Innovation Value analysis attributes are; *relative* advantage, *compatibility*, *complexity*, *trialability* and *observability*.	(Byers et al. 2011)
Blue Ocean Strategy	Blue Ocean Strategy (BOS) is about identifying new *uncontested* market *space* with a unique innovation curve (Unique Innovation Hot Spot) that make *competitors* increasingly *irrelevant* or *inadequate*. BOS don't use the competitors as benchmarking. BOS offer a holistic framework for assessing both internal and external issues.	(Kim and Mauborgne 2005a; 2005b)
Innovation strategies and tactics	Successful innovation emphasize; new stuff made useful but based on and *evolved from old ideas* (Incremental innovations most lucrative), empowered *creativity*, product *customization* and *external* collaboration.	(McKeown 2008)
Innovating the innovation process	An Open Innovation software development concept provides a fourth-generation (4G) innovation model describing "a *circle* of *change*" approach rather than linear. The *cyclic* model creates innovations built on innovations.	(Berkhout et al. 2006)
Product-Life-Cycle Management (PLM)	The *speed* of Product-Life-Cycles rapidly increases. To be able to meet these challenges Product-Life-Cycle Management (PLM) must adhere and *change* to be optimized for a *flux* environment in constantly *change*.	(Campos et al. 2014)
PLM: Surviving creative destruction	The differences in market *structure* and *competitiveness* have large impact on both speeding the product *exit* (End-Of-Life - EOL) and delaying product *entry* and give different possibilities for competitors and new entries.	(Figueiredo and Kyle 2005)
Innovative late entry (Follower strategies)	*Late entrants* (Followers) can increasingly more easy copy the best product or service attributes from pioneers (First-Movers); they can observe & learn and use *disruptive* strategies and tactics to attack the First-Mover.	(Shankar et al. 1998)
Innovation types (Archetypes)	Innovation types are historical been categorized with archetypes such as with Henderson and Clark´s framework; radical, architectural, modular and incremental. (Note: Within the app world, radical or incremental are adopted)	(Smith 2010)
Disruptive innovation strategies in the early stages of commercializing	Combing the considerations by both Clayton Christensen creating *disruptiveness* and Roger Moore's adopter cycle analysis. To be able to create *disruptive* innovations with high *value* the following core capabilities in *early planning* are identified; *proactive* orientation, *opportunity*-driven, *Value focused* and *driven* and strong customer *intensity*.	(Giglierano et al. 2011)
Create new markets with disruptive innovations	Core strategies are identified: *discovery*-driven, pre-planning of innovation value with early assessment and *feedback*, *activity*-driven, *unique* value propositions, creation of repeatedly innovation-driven growth processes.	(Christensen et al. 2003)
How to fight disruption	With a framework pinpointing *existing* vulnerabilities to disruption, identifying strengths and weaknesses, it is possible to address and deploy actionable tactics defending disruption.	(Wessel and Christensen 2012)
Creative disruption	Businesses need to transform the *core*, find big *adjacencies*, and innovate at the *edges* of their business model.	(Waldman 2010)

Table 2a. Overview – Innovation related literature review

Master research subjects	Relevant findings	References
Mobile app ecosystem characteristics, differences and patterns	The characteristics of the 3 leading App stores are highly different hence; competitiveness, openness, top list mechanisms, submission & approval or rejection processes, and collaboration with app developers and publishers. They are increasingly difficult to choose between hence differences for user adoption patterns and consequences.	(Karhu et al. 2014)
App developers and patterns of Innovation levels and sources	A more attractive selection of apps creating more demand and a "market pull" for more funding of apps. Diversity and increased number of app developers does not lead to increased or decreased app innovation levels, but rather qualitatively transforms the nature and sources of innovation. (**Note**: 28.960 apps analyzed from 5.973 producers)	(Boudreau 2012)
Strategically analysis of App store distribution & Adoption rates VS. costs	The app stores lowers technical entry and distribution costs for diverse innovative mobile apps, but the marketing costs are rapidly growing. There is a high rate of turnover (churn) in app success within app stores. The app owners use a small variety (homogeneity) of value capture/revenue models. **Note**: Ca. 5000 Free apps analyzed.	(Bresnahan et al. 2013)
Early failing within Mobile ecosystems and how to empower launches	A very high number of new products fail within mobile ecosystems hence diffusion speed and user adoption growth after they are launched. Addressed core reasons of failing are poorly alignment of; customers value (High innovation complexity), quality level and *insufficient* competitive advantages and *inaccurate* launches.	(Dell'Era et al. 2013)
Software Innovation Management	4 Software Innovation Management areas to master are identified: *The Art of Idea Valuation, The Art of Openness, The Art of Innovation Stimulation* and *The Art of Optimizing* and the *Impact of Critical Experts*.	(Pikkarainen et al. 2011)
App Developers & App store choices	Strategically decision making choosing development path between native and/or cross-platform development are crucial hence size of target markets and user adoption potential, and are increasingly challenging.	(Holzer and Ondrus 2011)
App Developers & Choice of App store and platform & App pricing tactics	Terms and conditions vary from App stores and represent an increasingly hurdle for app owner decision making. Direct publication of (Web) apps outside the App stores is less rigid and provide more control over; promotion and marketing, price tactics, profit margins and avoids fierce competition for visibility inside app stores.	(Gans 2012)
The Long Tail (of apps) & targeting niches	The Long Tail of app niches can be a lucrative way (Inside & outside App stores) to create unique market spaces hitting enough critical mass of adopters to achieve a tipping point and profitability.	(Anderson 2006)
Cross-Platform development & distribution strategies	Reduced development time & costs and maintenance costs are important factors to be able to compete on strategic cost levels and extend markets. A key technical issue is scalability and cross-platform tools (and especially MBaaS and PaaS) are designed for high growth and scaling up for massive user adoptions.	(Heitkötter et al. 2013)
Free apps coexisting with paid apps	Launching and promoting time limited (Trials) Free full versions rather than feature limited Free versions of paid Apps is a better strategy hence user adoption speed. **Note**: 2.82 million observations from 4.180 apps analyzed.	(Arora 2014)
Value Capture models for mobile apps	Value capture/revenue stream models for app developers & app owners are; bundles, trials, Free, Freemium, cross-selling, up-selling, In-App Purchase (IAP), "incentivized downloads", boost campaigns and In-App ads.	(Bresnahan et al. 2013; Hughes 2011)
App survival within App Store: Ranking & Rating	Higher ranked apps on the chart have a much higher probability of survival. Closely monitoring of Ranking & Rating are crucial. *Strategic price* is identified as a critical success factor for app survival. (Note: App Store (iOS) analyzed)	(Jung et al. 2012)
App reviews effects on user adoption	Early reviews are far more effective regarding diffusion *speed* and new user adoptions than reviews later in the app lifespan. Monitoring is urgent. **Note**: 8,701,198 reviews from 5,530,025 users across 17,330 apps inside App Store.	(Hoon et al. 2013)
User alignment of Mobile Marketing	Key factors that have a positive influence on mobile (Text based) Push messaging acceptance are: giving permission, personal adjusted message and offer, trust and control. Mobile Marketing content needs to provide; relevance, timeliness, high value and usefulness to the receiver. **Note**: 214 responses analyzed.	(Watson et al. 2013)
User alignment of Mobile Push Marketing & ads	Mobile Push Marketing & ads should pursue personalization and match interests, and ads must hit the target users providing various levels of value and economic advantages and incentives. **Note**: 363 user statements analyzed.	(Kim and Lee 2014)
Creating Passion brands	Core attributes for passion brand are: integrity, trust, difference, loyalty, fame, belief, cohesion, profit and *passion*.	(Edwards and Day 2005)
Customer Value Management (CVM)	Successful CVM spur *customer-centric* & *customer driven* strategies. Monitoring and analyzing Customer Engagement Behaviors (CEBs) such as word of mouth, blogging, ratings and reviews are crucial and KPIs to act on.	(Verhoef and Lemon 2013)
Commoditization	Key strategies to avoid that products becomes a commodity are; bundles, trials and continuous innovation.	(Quelch 2007)
Cross App Store publishing & IAP & ASO	Cross App Store publishing is a necessity hence potential high growth user adoption and multiple revenue streams. *Free* apps with In-App Purchases (IAP) gives the best revenue. App Store Optimization (ASO) is crucial for visibility.	Distimo (2012; 2013a; 2013b)
Trends and facts from Developers Economics 2014 & 2015	Marketing spending and costs to reach the Top lists are rapidly increasing. Just a few apps are earning big money. The usage of revenue models are highly homogenous. Free apps still are preferable for many hence visibility. Identifying the optimal tech for ads is difficult. **Note**: Surveys include between ca. 7000-10000 respondents each.	(Vision Mobile 2014a; 2014b; 2014c; 2015)
Business App median half-life is only 6 month	Business and communication apps have the longest median half-life (50% of total lifespan) with 6 months. **Note**: The analysis is based on **26.176 apps** across categories analyzed over 2011, 2012 and 2013.	(Flurry 2014)
App & business measurements	Successful app owners analyze; target user adoption numbers with cost/benefits and profit calculations and moves focus from Cost Per Install/Download (CPI/CPD) to Profit Margin Per Install.	Trademob (2013; 2014)

Table 2b. Overview – App related literature review.

Literature review of Innovation related literature (Table 2a)

Zott et al. (2011) underline with extensive research that modern business models revolves around customer-focused & customer driven value creation and unique value propositions. Models evolve from a *resource* based view to competitive advantages based on firm *activities*. These findings by Zott et al. (2011) are consistent with the research of Bharadwaj et al. (2013); Christensen et al. (2003); Giglierano et al. (2011); Nordström and Ridderstråle (2002); Osterwalder and Pigneur (2010); Wirtz et al. (2010).

Osterwalder and Pigneur (2010) are renowned for assembling relevant academic research adaptable for modern challenges and digital businesses and presents an intuitive 9 block step by step business model generation framework. The framework are suited to identify, assess, create and refine innovative business & revenue stream models including topics such as; differentiation, competitive advantages, high growth and scaling models. Multi-Sided platforms, Multi-Sided markets, lock-ins, hook and bait and Freemium models are identified as such models. Furthermore, Osterwalder and Pigneur (2010) supports the idea of combining the most updated and relevant combinations of different business and innovation theories and strategies including Blue-Ocean-Strategy (Kim and Mauborgne 2005a; 2005b), the same eclectic approach is applied into this master research.

Nordström and Ridderstråle (2002) argue that to be able to empower business lifespan and competitive advantages creation of continuously serial monopolies are suggested as sound business strategy. Additionally, *customer centric* focus on creating businesses based on *emotional Values* to create more *Funky* business and *passion* brands. Other key success attributes are; *Speed* of innovation and utilization of infinite innovation and re-inventions. These findings by Nordström and Ridderstråle (2002) are consistent with and cope with the research by Berkhout et al. (2006); Bharadwaj et al. (2013); McGrath (2013); Osterwalder and Pigneur (2010).

McGrath (2013) focus on research and analysis of *sustainable competitive advantages* for businesses and give proof for that the era of long-term periods of sustainable competitive advantage is over. To be able to compete within a globalized and transparent world managers need to re-think and adapt faster to external flux. The characteristics of a *transient advantage* strategically approach is; to stay ahead of the pack, businesses need to constantly explore and create many new strategically initiatives at once, continuously renewed. Continuous Innovation Management with focused and systematically Strategy-to-Execution (S2E) process is identified as a critical success factor. These findings by McGrath (2013) are similar to the approach of creating temporary serial monopolies presented by Nordström and Ridderstråle (2002).

Anderson (2009) pinpoints how *Free* both as a business model and value creation & capturing model is a disruptive model and disruptive price strategy. The author also describe several tactics to defend businesses against disruptors using Free as a weapon to conquer existing or new markets. Additionally, Anderson (2009) argues that asymmetric business models are growing among several industries and creates new offerings totally independent of each other and creates new revenue streams for the company and reduce risks and increase potential growth and profitability. Asymmetric business models is also a recent development within the app world (Vision Mobile 2014c). Free apps and related strategies and tactics are further analyzed by the research of Arora (2014); Bresnahan et al. (2013) and Hughes (2011).

Bharadwaj et al. (2013) pinpoint the importance within digital business of; *speed* of strategically decision making and *Speed* of coordinated product launches as identified success factors, with real time data analytics to support new optimized tactics. Digital business strategy excel; user centric innovation, user-added value & cooperative value generation (I.e.: API strategies). High absorptive capacity, agility and high quality content delivery are other identified key success criteria's. Bharadwaj et al. (2013) support the view about the smartness of building value creation from Multi-Sided platforms and Multi-Sided business models, and that such models shapes new businesses and creates multiple revenue streams. These research findings by Bharadwaj et al. (2013) are consistent with earlier research findings by Nordström and Ridderstråle (2002); Osterwalder and Pigneur (2010); Wirtz et al. (2010) and Zott et al. (2011).

Wirtz et al. (2010) argue that digital communication and social media technologies provide new ways of optimized interaction orientation using the following attributes to create competitive advantage; *customer centricity* (Customer value focused & value driven), *interaction configuration* (Routines and strategically feasibility), *customer response capacity* (I.e.: Social CRM, Social Media Community Management, Social Customer Care Management) and cooperative value generation (I.e. With use of APIs) with future and existing users and customers. Customization and personalization of digital products and software are identified as important key digital innovation success factors. These research findings by Wirtz et al. (2010) are consistent with research findings of Bharadwaj et al. (2013); Christensen et al. (2003); Giglierano et al. (2011); Nordström and Ridderstråle (2002); Zott et al. (2011). Additionally, Wirtz et al. (2010) are pointing out the importance of interaction configuration, customer response capacity and social media platforms to support these areas. Critical app success criteria's of Social Media Marketing, promoting and digital branding are furthermore analyzed and elaborated (Arora 2014; Bresnahan et al. 2013; Dell'Era et al. 2013; Edwards and Day 2005; Jung et al. 2012; Hoon et al. 2013; Hughes 2011; Kim and Lee 2014). Customer Value Management (CVM) are further explored within the research of Verhoef and Lemon (2013)

Anderson (2009) presents how *Free* as both a business model or value creation and capturing model thrives in the "*reputation economy*". *Free* is a powerful digital disruptive strategy; Anderson (2009) elaborate both how to use *Free* to entry markets and how to defend businesses against a diversity of *Free* business models from competitors trying to disrupt existing players. These findings by Anderson (2009) are further evaluated and explored for *Free* apps within other relevant research findings (Arora 2014; Bresnahan et al. 2013; Hoon et al. 2013; Hughes 2011; Jung et al. 2012).

Using innovation strategy as a business and management tool to create; uniqueness, differentiation, competitive advantages and real innovation value (Fernandes and Martins 2011; Kim and Mauborgne 1999, 2005a, 2005b; McGrath 2013) is subjects that touch the very core of this master research purpose and objectives.

Kim and Mauborgne (1999) pinpoint the distinction that Value Innovation as a strategy equally emphasize both the *innovation Value* and the mass of *buyer's Value* alignment. Value Innovation focus on creating a leap of radical innovation *value* (Not necessary radical technological innovation) delivered with a price tag accessible to the mass of buyer's within target market(s). The research of Kim and Mauborgne (1999) are bridging the gap between historical radical technology innovation or industrial era theory with the objective of creating superior value innovation.

Fernandes and Martins (2011) also focus on Value Innovation with their Value Based Innovation (VBI) research; product Value is determined of two important variables; levels of performance (Features and functionalities) and the price level. The price level is linked to the buyer's value perception and value alignment. Creating unique product differentiation, product varieties and a unique value curve are core objectives. Their recent approach additionally builds on a selection of Clayton Christensen's *disruptive innovation* theories (Christensen et al. 2003; Wessel and Christensen 2012) trying to make it more accessible for today's *practitioners* such as innovation managers. These research findings by Fernandes and Martins (2011) cope with the *value* approach from earlier research by Kim and Mauborgne (1999; 2005a; 2005b) and with the findings of Byers et al. (2011); Bresnahan et al. (2013); Dell'Era et al. (2013); Giglierano et al. (2011); McKeown (2008).

Byers et al. (2011) identifies five core innovation *Value* analysis attributes; relative advantage, compatibility, complexity, trialability and observability. Matching these practical attributes together with approaches by Bharadwaj et al. (2013); Giglierano et al. (2011); McGrath (2013); McKeown (2008) with the framework aspects by Kim and Mauborgne (1999) and Kim and Mauborgne (2005a; 2005b), all together connecting the gap between purely theoretical aspects of innovation strategy theory with more practical and actionable innovation operations.

Kim and Mauborgne (2005a; 2005b) present their Blue Ocean Strategy (BOS) framework that provide a wide range of practical innovation and business strategically assessments and tools. Their BOS framework aim identifying and creating uncontested new market space to avoid head-to-head competition resulting in a unique new Value curve (New innovation Hot Spot and new market space). This master research is adapting the framework for app innovation strategies and is emphasizing the external aspects of the BOS framework related to app innovation strategy and app Product-Life-Cycle Management (PLM). The research findings mentioned above by Kim and Mauborgne (2005a; 2005b) are correlated and extended from their earlier research about Value Innovation (Kim and Mauborgne 1999) and are adopted as one of several operational business and innovation strategically frameworks by Osterwalder & Pigneur (2010).

McKeown (2008) argues that successful innovation strategies emphasize; new stuff made useful but based on and evolved from old ideas (Incremental innovations preferable), empowered systematically creativity, product customization and external collaboration. Selecting the best product or service attributes from one or several existing products and combine them into incremental innovations that *feel* novel for the market and users are preferable attributes. That way the product innovation enhance its target user compatibility and observability. This approach indulge and emphasize a late entry or follower strategy with incremental innovations. This is a very common (and successful) approach within the software and mobile app world. These research findings by (McKeown 2008) are in line with and cope with the research findings by Bharadwaj et al. (2013); Byers et al. (2011); Christensen et al. (2003); Fernandes and Martins (2011); Nordström and Ridderstråle (2002); Shankar et al. (1998); Wirtz et al. (2010).

Berkhout et al. (2006) analyze how Open software can contribute as Innovation Management software to reduce time and costs within innovation projects. An Open Innovation software development concept provides a fourth-generation (4G) innovation model describing "a circle of change" approach rather than a linear process. The cyclic model creates innovations built on innovations. The research context cope with modern cyclic or iterative project methodologies such as LEAN, Agile and SCRUM and can be considered as supportive for understanding building innovations on innovations (continuously renewed) and creating transient advantages (McGrath 2013).

Campos et al. (2014) pinpoint how the *speed* of Product-Life-Cycles rapidly increases. To be able to meet these challenges Product-Life-Cycle Management (PLM) must adhere and change to be optimized for both high speed and a flux environment. These research findings by Campos et al. (2014) are in line and cope with earlier research findings by Berkhout et al. (2006) and Bharadwaj et al. (2013).

Figueiredo and Kyle (2005) pinpoint some basic but invaluable considerations for product entry and exit. Their research findings showed that the differences in market structure and competitiveness have large impact on both speeding the product *exit* (End-Of-Life - EOL) and delaying product *entry* and give different strategically and tactical possibilities for both the incumbent, competitors and new entries. These research findings by Figueiredo and Kyle (2005) cope with more recent research findings (Berkhout et al. 2006; Bharadwaj et al. 2013; Campos et al. 2014; Dell'Era et al. 2013).

Shankar et al. (1998) analyzed how innovative late entrants (Followers) strategically could outsmart the pioneers (First-Movers). Late entrants (Followers) can increasingly more easy copy the best product or service attributes from pioneers (First-Movers); they can observe & learn (Demands high absorptive capacity) and use disruptive strategies and tactics to attack the First-Mover. These research findings by Shankar et al. (1998) are still highly valid and easily visible within the app stores and the app world (Arora 2014; Boudreau 2012; Bresnahan et al. 2013; Dell'Era et al. 2013).

Smith (2010) presents a holistic and historical perspective about innovation theories and frameworks. Innovation types are historical been categorized with archetypes such as with Henderson and Clark´s framework; radical, architectural, modular and incremental. The adoption of innovation types or archetypes within software and mobile application is homogenous and current implementation of innovation labeling are down to either radical or incremental application innovations.

Giglierano et al. (2011) explore the early phase of innovation processes and pinpoint *proactive orientation* and *opportunity-driven* processes combing the considerations by both Clayton Christensen creating disruptiveness and Roger Moore's adopter cycle analysis. To be able to create disruptive innovations with high value the following core capabilities in early planning are identified; *proactive* orientation, *opportunity*-driven, *Value focused* and *driven*

and strong *customer intensity*. These research findings by Giglierano et al. (2011) are underlined as urgent for the early phase of innovation processes and are consistent with the findings related to; *customer centric* focus (Nordström and Ridderstråle 2002), *customer centricity* (Wirtz et al. 2010), *discovery-driven* (Christensen et al. 2003), *user centric* innovation (Bharadwaj et al. 2013) and *user-added* value (McGrath 2013).

Christensen et al. (2003) present how to create new markets with disruptive innovations; several disruptive attributes are identified: *discovery-driven*, *pre-planning* of innovation value with early assessment and *feedback*, *activity-driven*, identifying and creating unique value propositions and to create *repeatedly* innovation-driven growth processes. The approach of continuous innovation processes that lead to growth and reduced risk for disruption from others are researched further and supported both by McGrath (2013) with *Transient Advantage*, and cope with creation of continuously serial monopolies (Nordström and Ridderstråle 2002). Several of Christensen's *disruptive innovation* characteristics are analyzed later on by Giglierano et al. (2011).

Wessel and Christensen (2012) present how to *defend* businesses against disruption; with a framework pinpointing *existing* vulnerabilities to disruption, identifying strengths and weaknesses, it is possible to address and deploy actionable tactics defending disruption. These research findings by Wessel and Christensen (2012) cope with the research findings and approaches by Bharadwaj et al. (2013); Giglierano et al. (2011); McGrath (2013); Osterwalder & Pigneur (2010); Waldman (2010); Wirtz et al. (2010).

Waldman (2010) analyzes the core of both Christensen's *disruptive innovation* and Joseph Schumpeter's notion of *creative destruction*, establish a hybrid called "*creative disruption*". To reduce risks for being disrupted businesses need to transform the core, find big adjacencies, and innovate at the edges of their business model, not just the core <u>or</u> the edges but both simultaneously. The analysis and perspectives of Waldman (2010) are based on classical theories and how these are adaptable to a digital world and how digital businesses compete, adapt and transform. The findings by Waldman (2010) cope with the research findings by Christensen et al. (2003); Fernandes and Martins (2011); Giglierano et al. (2011); Wessel and Christensen (2012).

Literature review of Mobile app related literature (Table 2b)

Karhu et al. (2014) pinpoint that the characteristics of the 3 leading App stores (App Store, Google Play and Microsoft Phone Store) are highly different hence; competitiveness, openness, Top list mechanisms, submission & approval or rejected processes and collaborative characteristics with app developers and publishers. They are increasingly difficult to choose between hence differences for diffusion and user adoption patterns and consequences. These research findings by Karhu et al. (2014) cope with findings of Gans (2012) and Holzer and Ondrus (2011). Top list mechanisms, quality filtering, value perception and willingness to pay for Paid apps are analyzed further by Arora (2014); Bresnahan et al. (2013); Dell'Era et al. (2013). Amazon App Store is not included within the research by Karhu et al. (2014).

Boudreau (2012) found several interesting findings within his research; A more <u>attractive</u> selection of apps creating more demand and a "market pull" for more funding of apps. Furthermore, a great diversity and increased number of app developers does <u>not</u> lead to increased or decreased app <u>innovation levels</u>, but rather qualitatively transforms the nature and sources of innovation. Patents seems also increasingly inadequate because of the amount and speed of launches and market flux of the app world; visual aspects, functionality and sequences within app program's use are difficult to defend. Late entries or followers can simply vary or recombine these app attributes and easily avoid infringements.

Boudreau (2012) don't explicit explore or analyze Freemium apps or In-App-Purchase (IAP), neither looks into app profit margins or profitability or marketing strategies or tactics to increase user adoptions. Neither research of the consequences of First-mover VS. Follower strategies, or app innovation levels or complexity.

Within the outlook for future research by Boudreau (2012) both scope for app tweaking (re-combinations) and app *features* and market uncertainty, hence diversity within app innovation levels and complexity are addressed. Innovation types, levels and complexity are explored and included within the inductive and exploratory scope of this master research.

Bresnahan et al. (2013) present proof that the app stores lowers technical entry and distribution costs for diverse innovative mobile apps, but pinpoints that marketing costs are rapidly growing. There is a high rate of turnover (churn) in app success within app stores, the majority of apps are failing. The app owners use a small variety (homogeneity) of revenue stream models, leading to low to zero use of unique business models as disruptive force, most common is price disruption (Arora 2014; Hughes 2011; Vision Mobile 2014; 2015). These findings point out that most use of disruptive strategies are; price, marketing, features and quality content – all attributes of value innovation and byer's value perception (Byers et. al 2011; Kim and Mauborgne 1999; Fernandes and Martins 2011). These research findings by Bresnahan et al. (2013) are consistent with the research findings by Dell'Era et al. (2013).

Dell'Era et al. (2013) document *how* and *why* a very high number of new products or services fail within mobile ecosystems hence diffusion speed and user adoption growth after they are launched. Addressed core reasons of failing are poorly alignment of; customers *value* (High innovation complexity), quality level, additionally insufficient competitive advantages and inaccurate launches. Dell'Era et al. (2013) suggest several key strategically assessments to increase successfully launches and how to reduce the risk of failing. These research findings by Dell'Era et al. (2013) are consistent with the research findings of Bharadwaj et al. (2013); Bresnahan et al. (2013); Christensen et al. (2003); Giglierano et al. (2011).

Pikkarainen et al. (2011) look deep into software innovation processes and software Innovation Management. Relevant findings hence this master research purpose are especially the four Innovation Management areas to master: The Art of Idea Valuation, The Art of Openness, The Art of Innovation Stimulation and the Art of Optimizing the Impact of Critical Experts. These research findings by Pikkarainen et al. (2011) cope with the approach by Berkhout et al. (2006).

Holzer and Ondrus (2011) argue that to decide on both app OS (I.e.: Native and/or cross-platform or hybrid?) and distribution platforms (Which app store or distribution channel outside the stores is appropriate and most lucrative?) and channels reveals to be increasingly challenging for app developers (and app owners & entrepreneurs.) Strategically decision making choosing development path between native, cross-platform and hybrid development are crucial hence extending reach and size of target markets, development

costs, maintenance costs, marketing costs and user adoption potential and profitability. These research findings by Holzer and Ondrus (2011) are elaborated within more recent research (Arora 2014; Bresnahan et al. 2013; Dell'Era et al. 2013; Gans 2012; Heitkötter et al. 2013; Hoon et al. 2013; Jung et al. 2012).

Gans (2012) argues that terms and conditions vary from App stores and represent an increasingly hurdle for app owner decision making. Direct publication of apps outside the App stores (Web or hybrid apps) is less rigid and provide more control over; promotion and marketing, price tactics, profit margins and avoids fierce competition for attention and visibility inside the app stores. These research findings by Gans (2012) are consistent with the research of Holzer and Ondrus (2011) and cope with the research of Bresnahan et al. (2013).

Anderson (2006) and his Long Tail principles and characteristics are today well known inside and outside the scholar world and adopted by many digital businesses. The Long Tail of app niches can be a lucrative way (Inside & outside App stores) to create unique market spaces hitting enough critical mass of adopters to achieve a tipping point and sustainable profitability. These characteristics origin by Anderson (2006) cope with the recent research of Arora (2014); Bresnahan et al. (2013); Hughes (2011); Osterwalder & Pigneur (2010).

Heitkötter et al. (2013) explore and present *how* and *why* Cross-Platform development and strategies are a far more lucrative choice than just native single-platform distribution; reduced development time & costs and maintenance costs are important factors to be able to compete on strategic cost levels.

A key technical issue is scalability, maintenance and both cross-platform tools (and especially MBaaS and PaaS) are designed for high growth and scaling up for massive user adoptions; Cross-Platform tools utilize these factors. Another key reason for Cross-Platform development and Cross-Store distribution is to monetize much wider markets and to close the opportunity window for late entries and followers to be able to create business of unexplored platforms and channels. These research findings by Heitkötter et al. (2013) cope with industry analysis from Vision Mobile (2014; 2015) and Distimo (2012; 2013a; 2013b).

Arora (2014) presents a comprehensive research that points out that; launching and promoting <u>feature</u> <u>limited</u> *Free* versions of paid apps is not an optimal strategy; launching and promoting time limited (Preferable 14 days Trial to optimize cash flow) free <u>full versions</u> rather than feature limited *Free* versions of paid Apps is a better strategy hence user adoption <u>speed</u> (Diffusion). Arora (2014) pinpoints adoption speed for Paid apps are slowed down by <u>feature</u> <u>limited</u> *Free* versions, but conversion rates or profit margins or profitability are not included in the research scope. Dell'Era et al. (2013) looks more into other strategically and operational reasons that apps are failing, while Jung et al. (2012) explore app survival patterns including analysis of the ranking and rating system inside App store. The research by Arora (2014) reveal that free app versions *can* cannibalize the revenue stream of Paid versions of the same app hence user adoption <u>speed</u> of the <u>Paid version</u>.

Jung et al. (2012) explore app survival patterns within App store. The research findings shows that higher ranked apps on the chart have a much higher probability of survival. The early entrant (First-Mover) advantage exists inside App Store; firstly, from the ranking and rating system in the App Store, secondly from provided trialability and observability from reviews. These research findings by Jung et al. (2012) are consistent with the approach of being able to identify and compete with strategic price (Fernandes and Martins 2011; Kim and Mauborgne 2005a; 2005b). Hoon et al. (2013) looks in-depth on the importance of early reviews for user adoption growth and speed.

Hoon et al. (2013) provide proof with their extensive research analysis that early reviews are far more effective regarding diffusion and new user adoptions than reviews later in the app lifespan. These research findings by Hoon et al. (2013) cope with earlier research by Jung et al. (2012).

Watson et al. (2013) research focus and context are to analyze how end-users cope and align with mobile marketing. Their research identify critical key factors that have a positive influence on mobile (Text based) messaging acceptance: giving permission, personal adjusted message and offer, trust and control. Mobile Marketing content needs to show qualitative features such as relevance, timeliness, high value and usefulness to the receiver. These relevant findings still apply and cope with more updated research scope (Kim and Lee 2014) which include rich media app advertisement, Push messaging and In-App ads.

Kim and Lee (2014) reveal that Mobile Push Marketing & ads should pursue personalization and match interests, furthermore i.e. In-App ads must hit the target users providing various levels of value and economic advantages and incentives to be successful and not feel annoying for the mobile users. These research findings by Kim and Lee (2014) complete the mobile text based marketing research insights (Watson et al. 2013) with rich media usage such as In-App ads and i.e. video.

Edwards and Day (2005) identifies several key attributes for creating a *passion* brand; integrity, trust, difference, loyalty, fame, belief, cohesion, *profit* and *passion*. These attributes identified by Edwards and Day (2005) cope both with the focus on more *funkiness* and *emotional Values* (Nordström and Ridderstråle 2002), creativity-driven innovation (McKeown 2008; Nordström and Ridderstråle 2002), *customer-focused & customer driven* value creation and capturing (Bharadwaj et al. 2013; Dell'Era et al. 2013; Fernandes and Martins 2011; Giglierano et al. 2011; McGrath 2013; Wirtz et al. 2010; Zott et al. 2011).

Verhoef and Lemon (2013) focus with their research on critical key lessons and trends for successful Customer Value Management (CVM). Core areas of CVM are addressed: Customer Engagement Behaviors (CEBs), including CEBs consist of multiple behaviors, such as word of mouth, blogging, customer ratings and reviews. A key theme for successful CVM is *customer-centric* strategies that spur; optimized value focused measurements, KPIs and real time data analytics to monitor them. Within today's multichannel environment, creating strong positive customer experiences and brand image that are consistent across all channels (Web and Social Media) is crucial. Sound customer experience foster customer loyalty and high brand equity. Customer engagement value can be quantified into different attributes i.e. *customer influence value, customer referral value,* and *customer knowledge value*. *Competitive advantages* are built and founded by better understanding customer behavior through the lifespan of their business and customers value perceptions. These findings by Verhoef and Lemon (2013) cope with the research findings of Edwards and Day (2005); Hoon et al. (2013); Jung et al. (2012).

Quelch (2007) identifies the following key strategies to avoid that products becomes a commodity; bundles, trials and continuous innovation. These research findings by Quelch (2007) cope with Figueiredo and Kyle (2005) and the app related point of view of Bresnahan et al. (2013); Dell'Era et al. (2013); Campos et al. (2014).

Distimo (2012) mobile app industry report provide proof that the need for Cross App Store publishing is a necessity hence potential high growth user adoptions and creates multiple revenue streams. Among the key findings are that every app is published 1.3 times on average across the different app stores. If the objective is high user adoption and speed of user adoption, *Free* is the first choice because in all stores and in all countries the free volume is a minimum of 10 times higher than the paid volume. Regardless of the app store, more than 60% of the revenue is derived from In-App-Purchase (IAP). The findings also pinpoint that app developers and app owners focusing on app niches can be lucrative hence revenue and profit.

Distimo (2013a) mobile app industry report findings show that the top 10 countries in terms of app revenue from the Apple App Store and Google Play are: 1) United States 2) Japan 3) South Korea 4) United Kingdom 5) China 6) Australia 7) Germany) 8 Canada 9) France 10) Russia. 2013 showed an increasing trend towards the freemium business model, while paid apps made up a smaller portion of mobile app revenue.

None of newly released apps of 2013 reached a top 10 position in the yearly grossing charts in the Apple App Store. In contrast, four out of the top 10 grossing apps on Google Play were released in 2013. These findings pinpoint that it is increasingly difficult for new entries to compete for visibility within Top 10 positions against existing monster hits from incumbents.

The freemium business model (free apps with In-App Purchases) clearly takes the lead in terms of revenue, while the other business models: paid apps with In-App purchases and paid apps without In-App Purchases (IAP) have a significantly smaller revenue share, which is even smaller on Google Play than on iOS. The revenue share from *Free* apps with in-app purchases is clearly increasing on both platforms, the Apple App Store and Google Play.

Within the globally aggregated revenue from apps in the top 200 grossing charts. The proportion of revenue based on In-App Purchases increased from 77 percent to 92 percent in the Apple App Store and from 89 percent to 98 percent on Google Play (ibid).

Distimo (2013b) mobile app industry report findings show that an app that ranked number 10 in the top overall free charts in the Apple App Store for iPhone in the U.S. generated 72K downloads per day on average during May 2013. An app in the paid charts that ranked number 10 generated 4K downloads on average.

An app that ranked number 50 in the top grossing charts in the Apple App Store for iPhone in the U.S. generated $12K on average per day during May 2013, while on iPad this number was $10.2K. The revenue was significantly lower in Google Play at $6.6K.

The Amazon Appstore requires approximately nine times fewer downloads than the Apple App Store for iPhone in the U.S. in order to reach rank 50 free. The number of downloads needed in the Amazon Appstore for paid apps to reach a top 50 position was 2.8 times lower than in the Apple App Store for iPhone in May 2013. These insights shows that needed downloads to hit the different top lists are largely dependent on country, store, and rank type (free, paid or grossing) (ibid).

Flurry (2014) pinpoint with revealing statistics that within the App stores of Apple Store (iOS) and Google Play (Android) business and communication apps have the longest median half-life (50% of total lifespan) with 6 months. After reached half-life many of the app adoptions decline fast. (Note: The extensive analysis is based on 26.176 apps across categories analyzed over 2011, 2012 and 2013).

Trademob (2013a; 2013b; 2014) industry reports pinpoints the urgent necessity that app owners analyze; target user adoption numbers with cost/benefit and Profit-Per-Install/Download (PPI/PPD) calculations and they change focus from Cost-Per-Download (CPD) to profit margin measurements and KPIs. Increased marketing spending lead to higher profit for listing on i.e.: Top 25 rather than the more costly Top 5. That pinpoints that the goal to be listed at Top 5 or Top 10 lists for attention and visibility, not necessary are the best option hence profit and profitability (ibid).

Vision Mobile (2014a; 2014b; 2014c) present with their in-depth industry analysis that marketing spending continue to rise for app owners. iOS based apps capture the biggest volume and revenue cut. The recent development is that Web apps are on the second place before Android. Microsoft still lacking user adoptions and momentum. Web and hybrid are on the rise. Cross-Platform tools and services are increasingly being used and deployed.

Vision Mobile (2015) provide the latest industry report included within the scope of this master research. Key research findings pinpoints that the fierce app competition escalate within the leading 3 app stores. The early years of high paced growth in direct revenues from the app stores is now slowing down and the app revenues outside the app stores are rapidly growing.

The majority of app publishers are failing, while a very few "app busters" keep hitting the Top lists providing excellent diffusion and user adoption speed and growth and earns big money, but push the majority including new entrants out of the hottest Top lists.

The rise of the recent programming language Swift by Apple have in short time been adopted by many developers; 20% of mobile developers were using Swift just 4 months after it was introduced to the app world, while Google's Go language still 5 years after introduction only have reached 5% mindshare amongst mobile developers.

App developers that not explore and deploy any third party tools at all has fallen to an all-time low of 17%, while the focus is increased for the benefits of using cross-platform tools and services has grown from 23% to 30% in only 6 months. Within revenue capture models developments are both IAP revenue models and subscription based revenue model rapidly increasing; subscription model revenue will now reach $9 billion (ibid).

The findings across these included mobile app industry reports cope with the research findings by Arora (2014); Bresnahan et al. (2013); Dell'Era et al. (2013); Heitkötter et al. (2013); Hoon et al. (2013); Jung et al. (2012) hence; cross-platform development increase market share potential with cross app store launches, homogeneity of value capture/revenue models (I.e.: Free, IAP, Freemium, Paid, bundle, subscription), inaccurate launches, high speed of Product-Life-Cycles, fierce massive competition, a few massive "app hits" blocking the attention and visibility for late entrants within the Top lists, massive failing

hence poorly quality level and poorly aligned value and insufficient competitive advantages, increased marketing spending, squeezed profit margins, *Free* and low strategic price as preferable disruptive strategies within the app stores, the importance of early ratings and reviews, smartness and necessity of early digital PR and Social Media Marketing and digital branding.

3   Theory

In this chapter the topics; First-Mover VS. Follower approaches, incremental VS. Radical innovations, adopter cycles, business models evolvements, new digital business models & digital revenue capture models, Multi-Sided platforms and Multi-Sided markets, Value Innovation, Value Based Innovation (VBI) and strategy, Blue Ocean Strategy (BOS), Transient advantage, app marketing tactics, app business & revenue models, user adoption and disruption theories and capabilities and respectively opportunities will be analyzed. The selected theories and frameworks are explored to get a holistic approach for understanding these topics supporting and adaptable for B2B/business mobile app *Value-centric* innovation strategies.

3.1 B2B and business apps – context and definitions

What lies in the phrase "B2B Mobile app innovation strategy"? The acronym B2B mean: Business-To-Business; literally one business selling products or offering services to another businesses. The app world, press, blogs and authors, also more commonly use the term *business* apps, when covering or mixing B2B and including B2E (Business-To-Enterprise). In this paper when stated both B2B/business apps; this mean to cover both businesses (App development companies) selling to many businesses (Customers), and/or one company selling proprietary (Business or Enterprise) customized apps to one customer at a time. Value Based Innovation for apps in this paper is understood as a strategically business development process which leads to a mobile application (App) or app services delivered as native, cross-platform, Web (HTML5), hybrid or created as SaaS (Software-as-a-Service), all fitted for smartphones and/or tablets.

Innovation Strategy definition

What is the definition of strategy? Etymologically, the word "strategy" derives from Greek language. The word consists of two words putted together; "Stratos" means army, and "agein" means; to lead (Carter, Clegg, Kornberger 2008 p. 8). If there was no competition for an enterprise there would be no need for defining a strategy (ibid).

If you ask different people with different background, education and positions, you end up with a long list of different definitions. Today, strategy is very often technology driven. Technology change and develop, business models, business strategy and marketing strategy must change with all the new possibilities technology has brought us. I needed a definition of the word strategy relevant to B2B mobile app innovation strategy (which is business and technology driven) in this paper. The definition I decided on is quoted from Thompson and Strickland: "*A company's strategy consists of the competitive moves and business approaches that managers employ to grow the business, stake out a market position, attract and please customers, compete successfully, conduct operations, and achieve targeted objectives*" (Haugestad 2009).

B2B Mobile App innovation

The process from ideation, identifying business needs and value creation, application development and implementation of radical or incremental app innovations; included commercialization, diffusion and user adoption (Smith 2010, Hughes 2011). While classic innovation cycle theories defined four innovation classifications; incremental, modular, architectural, and radical (Smith 2010), in the app world (Hughes 2011) it is most common to only categorize mobile application innovations into two categories or classifications; radical or incremental innovations, excluding earlier categories and terms such as modular and architectural.

Definition and context of a Value-centric Innovation Strategy

A clear definition is necessary to address the explorative part of the research purpose, context and as foundation for the proposed 7 steps Value-centric Innovation Strategy model.

The context and foundation is based on well researched theories and frameworks; value-driven business models (Zott et al. 2011), business model generation canvas (Osterwalder & Pigneur 2010), Value Innovation (Kim and Mauborgne (1999), Value Based Innovation (Fernandes and Martins 2011), Blue Ocean Strategy (Kim and Mauborgne (2005a; 2005b). Transient advantages (McGrath 2013) and speed of decision making and execution, *user centric* innovation, *user-added* value and speed of coordinated product launches (Bharadwaj et al. 2013).

Anchored within these theories and frameworks and models in this paper, the following definition is formulated;

Innovation Strategy for B2B Mobile Apps: A value-centric approach

"The process of creating B2B/Business app innovation strategies that utilize Value-centric characteristics and attributes pursuing enhanced Product-Life-Cycle"

3.2 First-Mover VS. Follower approaches

Two totally different strategically innovation approaches are; First-Mover and Follower strategies (Haugestad 2013). What does first-mover strategy mean? To quote Smith (2010 p. 163): *"The first-mover strategy, as its name implies, is about being first to market with a new product or service."* What does follower strategy mean? Follower strategy described by Smith (ibid) *"…a follower or latecomer or sometimes even an imitator strategy, this involves taking a "wait-and-see" approach, rather than perceiving innovation as a race in which being first to market is critical."*

The follower often analyzes the first-movers innovation, technology, product or service, and how the market adapt to the innovation. Smith (ibid) points out; *"When it becomes clear that there is a high level of consumer acceptance in the market or the number of competing designs begin to show signs of diminishing, then and only then does the latecomer (follower) enter the market"* (ibid).

When first-mover entrants create a new product into a new market, they have the ability to determine and create a higher price than follower entrants. The two different approaches also effects cost base, project development scope, time to market, diffusion and user adoption tactics. When assembling these strategic approaches with Blue or Red Ocean strategy (Kim and Mauborgne 2005a; 2005b), and combining radical and incremental innovations (Smith 2010) with Roger's adoption cycle we get the following typical different strategically scenarios exemplified (Haugestad 2013):

- First-Movers creates radical innovations, with higher R&D development costs and longer time to market, creates a new market (Blue ocean strategy, without head-to-head competition), target innovators and early adopters first and defines the market value (Achieving high product price and profit margins)
- Followers creates incremental innovations, with lower R&D development costs, entries a more mature market (Red ocean strategy with head-to-head competition), target early majority and late majority, disrupt with adding product functionality to existing market price, or disrupt existing market and product lowering the price with "good enough" functionality (Achieving lower product price and profit margins), when several followers entries the same market punctuated equilibrium will occur before or later in the timeline

The first-mover has several potential tactical advantages, firstly; "*the first-mover, by being first, has an opportunity to establish a technological lead, thereby becoming more familiar, more practiced and more competent as far as the technology is concerned*" (Smith 2010 p. 163; Haugestad 2013).

Radical VS. Incremental innovations

The idea of value innovating is moving far beyond the boundaries of innovation types or classifications (Archetypes / categorizations). Nevertheless, knowing the classification of a certain new or existing business app either is a radical or incremental innovation have some strategically implications; first, innovation types are commonly connected with either a First-Mover (New entry) or Follower (Copyist/Late entry) strategic position. Second, these different approaches provide unlike tactical marketing, tactical pricing and disruption possibilities and limitations hence their nature.

3.3 Innovation Adoption Curve

In addition to focus on customer or market segments and niches (Fernandes and Martins 2011; Kim and Mauborgne 2005a;2005b; Anderson 2006), is it smart to think about how different people (business app users) cope with new innovations. The innovation adoption curve of Roger's (Smith 2010; Byers et al. 2011) is a model that classifies adopters of innovations into various categories, based on the idea that certain individuals are inevitably more open to innovation adaptation than others illustrated in figure 4 (ibid).
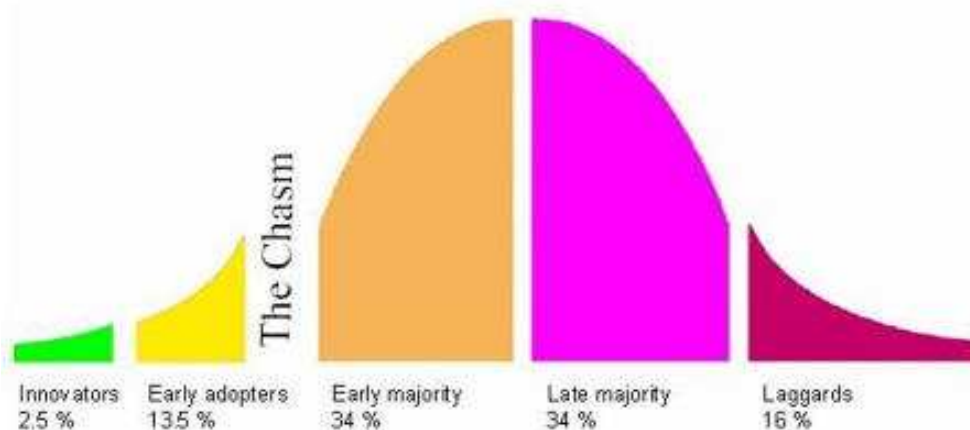
Figure 4. Roger's Innovation Adoption Curve and The Chasm (Byers et al. 2011 p. 271).

Roger's adopters characteristics bring invaluable strategically insights (Haugestad 2013):

- A person's innovation adoption characteristic affects the rate of uptake of an innovation over time
- Different adopter groups buy into innovation for different reasons and have different expectations
- People who are innovators and early adopters are easier to convince to innovate
- Mainstream adopters (early and late majority) who make up 64 % of any population and these adopters determine whether an innovative practice is embedded
- Mainstream adopters need different support structure from early adopters in terms of support, different emphasis on technology and teaching practice
- Innovators may require looser and less tightly controlled conditions, while mainstream adopters may require more stability and support

Innovators and early adopters make up only a small proportion of any population (2.5% are innovators and early adopters about 13%) and there are not enough of them to have an impact on embedding innovation in an organization (Smith 2010; Byers et al. 2011; Haugestad 2013). Geoffrey A. Moore identified and created a business theory called *Crossing the chasm*, where he argued that there is a gap that exists between the early adopters of any technology and the mass market. He explained that many technologies initially get pulled into the market by enthusiasts, but later fail to get wider adoption (Byers et al. 2011 p. 270-

274). These insights should be discussed and assessed creating either radical (First-Mover) innovations, or incremental (Follower) innovations, together with Blue Ocean (Niche market) or Red Ocean (Mass market) strategically different paths, given the unlike tactical possibilities and limitations within digital marketing, digital brand positioning.

Why early & late majority adopters are equally important as innovator adopters

Every technical entrepreneur is an early adopter of technology, so naturally they build things with people like themselves in mind. Unfortunately, for most solution markets, early adopters represent only 10 to 15 percent of the total opportunity, so it's easy to get mislead on the real requirements of mainstream customers.

The good news is that early adopters are never reluctant to sign up as mobile app beta customers and will provide you early feedback on product quality. The bad news is that they are not a good test of basic usability, compatibility, complexity, or observability (Byers et al. 2011) and ease of operation, which are always a key to the much larger market of customers.

Listening too much to early adopters often leads to an expensive death spiral, since these users will request more and more features, more precise control of the technology, and more interoperability, all of which increase the complexity of the product, and decrease the usability for the average customer. The result is a bigger and bigger chasm to cross to your real market.

Here are some critical issues addressed for optimal innovation management, Product-Life-Cycle Management and marketing and user adoption tactics to maximize results from early adopters, as well as maximize proactive-driven and opportunity-driven approaches from the mass of potential byers (Hughes 2011):

- **Collect feedback across the total range of existing and target potential customers.** Early adopters may be the most vocal, and easy to sign up, but the technology assessment panel must include customers from the early majority, late majority, and even technology laggards. These last three groups usually comprise up to 85 percent of potential market.

- **Usability features are as important as function.** Features you designed for non-technical users, including wizards for setup, dashboards for overview operation, and simple buttons for complex processes, will get little or no feedback from early adopters. They will request and be more vocal about technically tricky and elegant features.

- **Reduce innovation complexity.** Early adopters are not intimidated by dense user interfaces, with more options to control the technology, and the flexibility to do almost anything. Regular users like to see more white space, and are more impressed with the Amazon patented one-click-buy button, to complete a purchase in one click.

- **Balance your focus on value innovating.** Many technical entrepreneurs continue to "tune" the system, and add new parameters for users to worry about, simply because they can. At some point, this becomes compulsive engineering, and the tradeoffs in time to market, cost, and user friendliness move the product out of the intended market. Rather excel user value-centric features.

- **Early adopters are cool, so you need them to kick-start word-of-mouth.** You certainly can't afford to ignore early adopters, or antagonize them. They are your early opinion leaders, so they are required to build the image that the rest will follow. The challenge is to attract them with an innovative solution built on great technology, while still keeping it usable, timely, and cost effective for the rest of us.

Early adopters are a critical but small market segment that must be treated with respect. They can be your best evangelists or your biggest critics at that critical point when you are crossing the chasm to the larger mainstream customer segment. Early adopters are the most valuable members to join the app brands social media community for viral and word-of-mouth marketing tactics.

But don't ever be become complacent due to excitement and passion from your early adopters. You still need the same reaction from your other adopters, and an appropriate marketing strategy for scaling the business into other segments. Ten percent of even a large opportunity can still leave you in the valley of death, rather than the pinnacle of success.

3.4 Innovative late entrants

Shankar et al. (1998) pinpoint some crucial basics adaptable for late app entrants. Innovative late entrants (Followers) are successful in many industries. Late entrants can increasingly more easy copy the best product or service attributes from pioneers (First-Movers); they can observe & learn and use disruptive strategies and tactics both hence; product innovation value alignment - building new incremental product attributes, price disruption, spot new market/user needs, lowering marketing and sales costs, create business & revenue model disruptions.

Innovative late entrants both score high regarding; diffusion speed, potential market shares and retention rates. Innovative late entrants grow faster than the pioneer; the market is more mature for the late mover, and they can use less marketing spending to achieve same unit sales as the first-mover.

The greater diffusion and sales for the late entrant, slows down the diffusion of the first-mover. Product trials are identified as a superior diffusion and user adoption strategy for late entries. Difficult for non-innovative followers to harvest same volumes of adopters (Laggards).

The market share potential for innovative late entrants are equal or better than for the pioneer when successfully deployment of strategies and tactics. Timing of incremental innovations by followers are related to how long time the pioneer has been present in a market regarding gaining potential market shares.

Cumulative profit margins for late entrants are often less than for the pioneer's temporary monopoly period. The upside for followers are to create more targeted and timely relevant innovation value combined with buyer's value alignment; making the first-movers product increasingly irrelevant or a commodity (ibid).

3.5 Value-driven business models

The research of Zott et al. (2011) reveal that researchers and scholars do not agree on what a business model is and that the available literature is biased by the subject of interest of the respective researchers and what their work related disciplines are grounded in. Another reason behind different researcher lenses and approaches are the differences within purely theoretical based scholar articles and more practitioner-oriented studies (ibid). The identified recent interest within business models areas are; "*(1) e-business and the use of information technology in organizations; (2) strategic issues, such as value creation, competitive advantage, and firm performance; and (3) innovation and technology management*" (Zott et al. 2011 p. 2). One important characteristic is that the business model is a unit of analysis that is distinct from the product, firm, industry, or network; it is centered on a focal firm (ibid). Further, business models emphasize a system-level and holistic approach to explaining how firms "do business"; additionally, business models are moving from a *resource* based view to *activity* based approach and seek to explain both how value creation and value capture are deployed (ibid).

Zott et al. (2011 p. 10) argue further that within their research scope and definition; "*the business model is not a value proposition, a revenue model, or a network of relationships by itself; it is all of these elements together*". The app industry often categorize i.e. *Free* apps as a business model, others call free apps a revenue stream model or value capture model. In the case of *Free* apps, there are of course app owners using *Free* as a distinct business model, while others have *Free* as one of many monetization models. So within the app world there are also different understanding and usage of these terms and definitions.

The research of Zott et al. (2011) reveal that for decades the very definition of business models are diversified and complex. Their research is looking on two of many identified definitions and approaches; that business models both can be an architecture and a conceptual tool or business development model (ibid). Business model generation tools and modeling are also supported within the same paradigm research approach by Osterwalder and Pigneur (2010) who propose a model and assessment of 9 intuitive building blocks to create a sound business model including value creation & capturing models.

Zott et al. (2011) identifies several general components a business model should address, identify and define; how to build an architecture to create and to deliver customer value of

the product or service (Value propositions), how to design value creation and value capturing leading to the choice of revenue stream model(s) (Preferable multiple recurring streams), how to determine the (innovation) value to customers at an appropriate cost (Target cost), how to identify the target market position (Market curve), cost analysis, financial performance (Economy of scale) and profit formula (ibid).

Zott et al. (2011) reveal that businesses that focus on *novelty* together with either *differentiation* or *cost* leadership have positive affect on a firm's performance, and that *novelty-centered* business models emphasizing early entry (First-Mover) strategies all have positive effect on company performance (ibid).

The most relevant key findings related to the research of Zott et al. (2011) are that the recent business model revolves around *customer-focused* value creation and *unique* value propositions. Another important finding is that business models evolve from a *resource* based view (I.e.: Barney 1991; 1995) to creating competitive advantages based on firm *activities*.

Nordström and Ridderstråle (2002) argue that to empower competitive advantages creation of serial monopolies are suggested as sound business strategy. Key focus areas with a *Funky* Business approach are; *continuous differentiation*, process innovation, create and maintain a culture for creativity & innovation, building organization and strategies that cope with chaotic never-ending changing environments. *Customer centric* focus on creating businesses based on *emotional Values* to create *passion* brands. *Speed* of innovation and utilization of infinite innovation and re-inventions. *Funky competitive advantages* are synonymous with *imagination*, *creativity* and *passion* (ibid).

In the "reputation economy" (Anderson 2009), *Free* is a powerful digital disruptive business or value creation & capture model and *price strategy* and *disruption* model. The Free model is about losing a lot of money and making it back distributed by a relative few. Free products or services thrive in the reputation economy; supported by a diversity of Free or Freemium models for unleashing the power of Free (ibid).

To be able to compete against Free, when competitors are giving away products businesses can offer or create (ibid):

- More attention, visibility, reach and brand awareness
- Viral and Social Media Marketing
- (Short) Trials of your full version app(s)
- Create product bundles for up-selling & cross-selling
- Lock-ins
- Low production costs (Open Source or SaaS/MSaaS tools)
- Increase the passion and utility among users
- Charge for the content – not the app itself
- Superior add-on features making the disrupting product a commodity
- Monetization on micro-transactions or "pay per usage"
- Multi-sided markets
- A new market space based on *re-thinking* the problem
- A new unique target market space with less competition (Market segmentation)
- Move from PPD to subscription based revenue models (Providing recurring revenue streams)
- Value-added product innovations or services

Free apps with diversified monetization models are highly present within the app stores (Arora 2014; Boudreau 2012; Gans 2012; Bresnahan et al. 2013; Hughes 2011).

Three different Freemium value creation and capture models

The term "Freemium" has been widely discussed and promoted by Chris Anderson, the author of The Long Tail (Anderson 2006) and *Free* - The radical prize of zero (Anderson 2009). But the term was earlier coined by Jarid Lukin and later popularized by Fred Wilson (Venture capitalist) on his blog (Osterwalder & Pigneur 2010 p. 96). Anderson distinguished between three common uses of "Free" scenarios (Haugestad 2013):
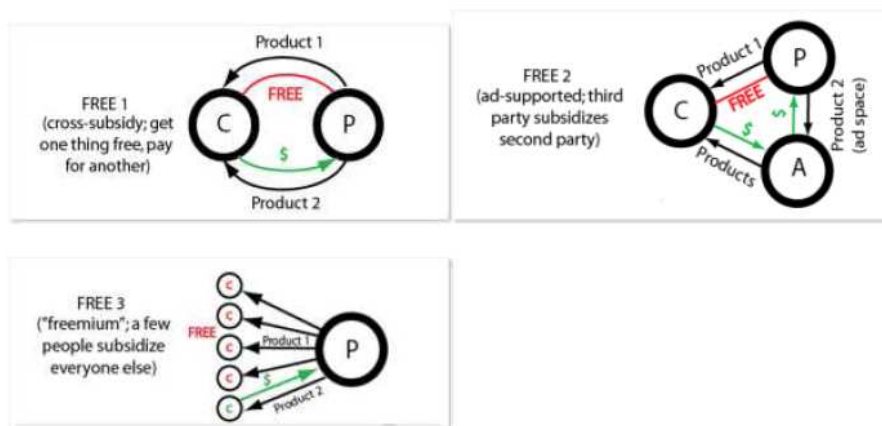
Figure 5. 3 different Freemium models. Source: http://alstonroadgroup.com/tag/free-the-future-of-a-radical-price/

Asymmetric business models: the new rules of the app economy

Asymmetric business models are pointed out by Anderson (2009); Osterwalder and Pigneur (2010) and from an app perspective by Vision Mobile (2014c). The magic behind the success of these companies is that they have disrupted one market only to take value from it to another market where they can value capture it. By competing in 2 markets in parallel they create a competitive advantage difficult to disrupt, developing an asymmetric business model. This business model disruption is used to disrupt incumbents (ibid).

Business models and Value creation & Capture summarized

To sum it up; this aggregated listed complementary business areas characterize the research about business models, value creation & value capturing and value propositions;

- Customer centric value configuration
- Novelty-centered (First-Mover) business strategy
- Differentiation through radically new business model innovation
- Disruption with incremental innovations with high user or byer value alignment
- Activity based rather than resource based
- Market position targeting (& re-targeting)
- Close linking between cost and revenue model architecture
- Value creation & value capturing (Preferable recurring and multiple revenue streams)

3.6 Digital business models and digital Value Creation & Capture models

The research of Bharadwaj et al. (2013) pinpoint how digital technologies change, transform and shapes new business models, business processes, business activities, business capabilities and help companies to create new products and services. The researchers identifies four core themes within their research: "*(1) the scope of digital business strategy, (2) the scale of digital business strategy, (3) the speed of digital business strategy, and (4) the sources of business value creation and capture in digital business strategy*" (Bharadwaj et al. 2013 p. 471).

The recent developments last decade within digital technologies especially within digital communication are transforming of how businesses communicate and interact both within consumer and business related companies. Social Media Marketing is highlighted as one very important successful new tool.

Digital (Cloud) platforms are creating both new industry disruptions and creating new business strategies. The speed of; marketing flux, product launches and constantly changing competitive environments are way more intensive within digital businesses than within brick and mortar businesses. Bharadwaj et al. (2013) points out that these characteristics result in the necessity of; *speed* of decision making, *speed* of product launches and *speed* of coordinated product launches (Matched to competitors) (ibid).

Management decisions about choosing the right technology (and innovation path) to support faster product launches is increasingly important. The goal is to create value that is not seen within the same *ecosystem* (Or i.e.: Market or niche), resulting in a high uniqueness and differentiated products. Coordinated product launches with what competitors are doing are crucial within digital product ecosystems to increase success (Ibid).

Bharadwaj et al. (2013) believe that there would be no separation between business strategy and digital business strategy. The authors also pinpoints that new analytic tools offer real time data that helps managers with strategically and tactical decision making faster than ever. Measurements and analytics together are tools to be able to perform insightful *speed* of decision making and *speed* of coordinated product launches with new

high valuable features. The digital ecosystem conditions are; faster, highly fluctuated, multifaceted, data rich and more dynamic than traditional industries (ibid).

The *speed* of scaling up the business activities and specially speed of delivery and customization of products determine digital businesses including digital products and mobile apps. Especially the creation of products delivered with cloud services and with technologies such as; SaaS, BaaS, MBaaS and PaaS (Platform-as-a-Service). Such cloud based services and platforms offer adaptable self-service models for the users and byers and offer easy ways of scaling up the business and ease the technical sides of diffusion and user adoptions. Bharadwaj et al. (2013) calls these types of new technology Strategic Dynamic Capability within scaling. Such platforms (App stores and own download pages with cloud based back-end servers) are ready for huge amount of users from launch of new apps and offers smart ways of promoting free trials, bundles, up-grades, cross-selling and pay-as-you go subscription alternatives.

If the traditional desktop software world and digital businesses are about *speed*, the multiplied faster and flux mobile app world and ecosystems is more about *hyper-speed* of decision making, *hyper-speed* of coordinated product launches and *hyper-speed* of scaling extending this logic assumption.

The ability to be agile and detect the target user needs and challenges are increasingly important (Both before and after launches). User centric innovations and open or hybrid innovations are tools to capture real value. Identifying and assessing the real innovation value and understand the users value alignment are crucial for innovation management; digital businesses must rapidly react and respond to the fast-paced nature of software & app innovation, rapid implementation and frequent launches of new features to be able to create and keep competitive advantages, disruptive innovations and survival within digital ecosystems.

Customer Value Management (CVM) (Verhoef and Lemon 2013) integrate insights from social media communication, assembling all these data within enterprise solutions such as Social CRM solutions enhance insights about i.e. user and customer engagement, product behavior, retention rates, support issues, analytics and insights, and help speeding up decision making by managers. Slow responses to address user support issues or subscription

or product upgrades will push away users more rapidly than ever before (ibid). If there is an alternative product (It usually are), they can be found with a few mouse clicks away. Therefore, within software and mobile app industries and app development companies which operates in ecosystems with rapid changes in technology and features, competitive advantages lies not in just promoting new products (First-Mover advantages), but to target a biggest possible market(s) or niche as possible, and to increase accessibility either on global scale, and/or with several Multi-sided platforms and Multi-sided market strategies (Osterwalder & Pigneur 2010) to be able to capture and monetize the first-movers transient advantage for as long as possible (Nordström and Ridderstråle 2002; McGrath 2013).

The network anchored theories are ineffective to analyze in a historic perspective for app developer, app owners or entrepreneurs; *"In contrast, app developers align and realign their affinity to the different platforms based on technical functionality and attractiveness. The dynamics of network formation and reformation in such areas raise implications for us to rethink the drivers of network structure in digital settings"* (Bharadwaj et al. 2013 p. 477).

Digital communication and social media technologies provide new ways of optimized interaction orientation using the following aspects to create *competitive advantage* (Wirtz et al. 2010); customer centricity (User value focused & driven), customer interaction configuration (routines and strategically feasibility), customer response capacity (I.e.: Social CRM & Social Media Community Management) and cooperative value generation (Open or hybrid innovation processes) with future and/or existing users and customers. Hybrid innovation within this context is principle alike Open innovation, but customers or potential future users need to login to a community for sharing their wanted user needs. This way keeps the competitors outside the process of open innovation, reducing risk for copying innovative features. Customization and personalization of digital products and software are important identified key innovation success factors.

Digital business models and digital Value Creation & Capture models summarized

To sum it up; aggregating the core *Value-centric* characteristics and approaches across the literature (Anderson 2009; Bharadwaj et al. 2013; McGrath 2013; Nordström and Ridderstråle 2002; Osterwalder & Pigneur 2010; Wirtz et al. 2010; Zott et al. 2011) provide a highlighted list of areas adaptable for B2B/Business app strategically considerations;

- *Activity* based rather than *resource* based
- *Speed* of strategy, innovation and execution
- *Opportunity-driven* innovation
- *Customer-driven innovation*
- *Flux* market demands *speed* of product launches spur continuously Innovation Management
- Creation of *Transient advantages extending Product-Life-Cycles*
- Creating businesses based on *emotional Values* to create *passion* brands
- *Customer centric* value configuration (User value focused & value driven)
- Interaction *configuration*
- *Customization* and *personalization* of digital products
- *Cooperative* value generation (I.e.: API strategies)
- Customer response *capacity*
- *Novelty*-centered (First-Mover, early entry) business strategy
- *Value-added* product or service innovations
- Differentiation through *radically* new business model innovation
- Market *position targeting* (& re-targeting)
- Market *expansion* or *creation* of new markets with *Multi-sided* markets and *Multi-sided* platforms
- Market *segmentation*
- *Asymmetric* business models
- *Disruption* with *incremental* innovations with *high* user or byer *value alignment*
- Value creation & value capturing (Preferable occurring and multiple revenue streams)
- A diversity of *Free* monetization models as both business model disruption and price disruption
- Close *linking* between *cost* and *revenue* model *architecture*
- Pursuing sustainable *profitability* with target *strategic* cost and *strategic* price

3.7 Value-centric Innovation

4 main theories and frameworks within the literature review have a distinct focus on how to value innovate with a highly Value-centric focus and approach. The theories and frameworks are; Value Innovation (Kim and Mauborgne 1999), **V**alue **B**ased **I**nnovation (VBI) (Fernandes and Martins 2011), **B**lue **O**cean **S**trategy (BOS) (Kim and Mauborgne 2005a; 2005b) and Transient advantages (McGrath 2013).

3.7.1. Value Innovation

Value Innovation (Kim and Mauborgne 1999) as a strategy *equally* emphasize both the *innovation value* and the mass of *buyers Value alignment*. Value Innovation focus on creating *radical* innovation *value* (Not <u>necessary</u> new or radical *technological* innovation) delivered with a *price tag accessible to the mass of byers* within target market(s) (ibid).

Too many innovations fail to get desired diffusion and user adoptions. Sometimes an idea leads to a "cool" prototype or product, but fails regarding commercialization. An innovative product is not necessary creating and capturing user or byer value for the target market(s): "*Value innovation places equal emphasis on <u>value</u> and <u>innovation</u>. Value without innovation tends to focus on improving the buyer's net benefit or value creation on an incremental scale. Innovation without value can be too strategic or wild (by betting on a company's long-term industry foresight) or too technology-driven or futuristic (shooting far beyond what buyers are ready to accept. Value innovation anchors innovation with buyer value"* (Kim and Mauborgne 1999 p.45).

Value innovation is about expanding existing markets or better; creating a new market space with less competition. Strategic thinking and assessments creates a giant leap of superior value for the target buyer, moving focus from the competitor's (Technological) advantages to use talent creating radical value perception.

A different approach with Value Innovation is to target the mass of buyers by following noncustomers closely, rather than just focus on i.e. retention rates of existing customers. Following noncustomers patterns gives invaluable insights about trends and changes. The goals with Value Innovation are i.e. create new markets or render existing products obsolete with launching new disruptive high value and superior product innovations.

Value Innovation utilize creating radical value rather than radical technical innovations. Value Innovation excel creating "Game Changer" innovations; redefining the problem or challenge themselves. Focusing on redefining the problem a value innovator utilize the performance criteria that matter the most from the target user or customer perspective.

"Value innovation is not the same as value creation. Value creation as a concept of strategy is too broad because no boundary condition specifies the direction a company should follow to bring about successful strategic actions. Value creation on an incremental scale, for example, still creates some value, but is not sufficient for high performance" (Kim and Mauborgne 1999 p.45).

Value innovators are using both internal en external knowledge and talent, looking outside both for a bigger brain and for technology usage and for strategic partnership. Successful Value Innovators are using small teams, have clearly defined Value Innovation goals, puts team with different background together and put creativity into system (Innovation Management) and pursue *speed* of execution.

Solving hidden demands or creating radically new ones, meaning gaining insights from creative strategic thinking within innovation management, leading to creating totally new market space (New Value curve). Value Innovation use *strategic pricing* defining a medium price tag; (not low and not high pricing) launching with high price tags invites followers to compete.

Value Innovation focus further on speed of diffusion, high volumes and growth, and low target costing hard to beat for imitators and followers. Deployment of these strategic areas will contribute to empowered profitability. The goal is to fast build a passion brand with high brand awareness and visibility leading to premium reputation using these attributes as barriers for followers and late entries (ibid).

The relationship among Value Innovation, technology innovation and value creating is presented in figure 3:
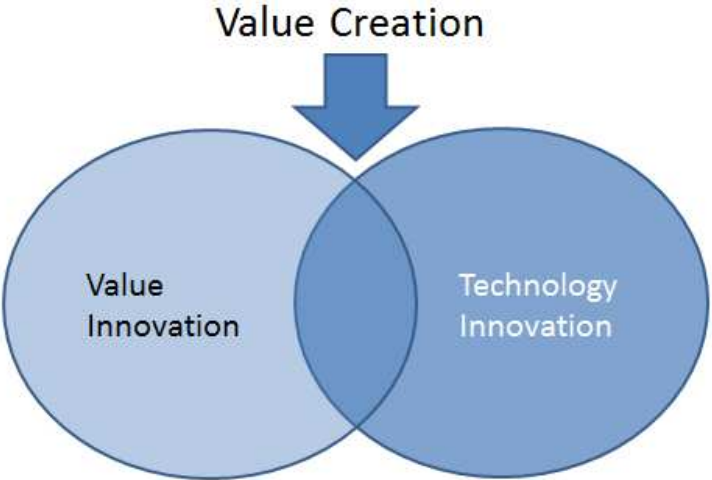
Figure 6. Relationships among Value Creation, Value Innovation and Technology Innovation. Source: Kim and Mauborgne (1999 p. 45)

Value Innovation pursue to shift strategically focus from outperforming the competitors to make the competition irrelevant or inadequate, illustrated in table 3:

Three Basic Building Blocks of Strategy	Convential Focus	Shift in focus	Value Innovation Focus
Competition	Outperform the competition	→	Seeking radically superior value to make the competition irrelevant
Customers	Retaining and better satisfying existing customers	→	Targeting the mass of buyers by following noncustomers closely and willingly losing some existing customers
Corporate Capabilities	Leveraging and extending the current capabilities of a company	→	Willing to combine with other companies' capabilites

Table 3. Shifting Focus to Value Innovation (Kim and Mauborgne 1999 p. 50).

Value Innovation strategically thinking provides an extended business logic, challenging conventional logic, table 4:

Question to ask	Conventional Logic	Value Innovation Logic
Question 1	Does your company allow industry conditions to dictate the realm of what is possible, probable, and profitable?	Does your company challenge the inevitability of industry conditions?
Question 2	Does your company focus on outpacing the competition?	Does your company focus on dominating (Dominant design) the market by introducing a major advance in buyer value?
Question 3	Does management start by considering current assets and capabilities?	Does management consider starting a new?
Question 4	Does your company focus on customer segmentation, customization and retention?	Does your company search for key value commodities that can unlock the mass market (Or niche) even if some existing customers will be lost?
Question 5	Does your company strive to improve the products and services of your industry? (or niche)	Does your company think in terms of a total customer solution even if this pushes beyond the industry's traditional offerings?

Table 4. Five Key Questions to Reframe Strategic Thinking (Kim and Mauborgne 1999 p. 51).

Value innovation links innovation to what the mass (Roger's early and late majority adopter cycle) of *buyer's* value. "*To value innovate, companies must ask two questions: (1) Are we offering customers radically superior value? (2) Is our price level accessible to the mass of buyers in our target market? High-growth companies understand that offering a new and superior product or service at a price that most buyers cannot afford is like laying an egg that other companies* (Followers/imitators/late entries) *will hatch*" (Kim and Mauborgne 1999 p. 45).

Technology innovation differs from value innovation because value innovation focuses on redefining the problems or challenges themselves. Focusing on redefining the problem or challenge an industry or business focuses on, a value innovator shifts the performance criteria that matter to existing or future customers (Uncontested market space), and therefor are able to create new market space, avoiding head-to-head competition. This is how value innovation makes competition irrelevant. The success criteria's are to discover hidden demands (Unarticulated Value) or to create totally new demands, similar to Blue

Ocean Strategy (Kim and Mauborgne 2005a; 2005b) and Schumpeter's (1946) theory about "creative destruction", hence using creative strategically thinking to build radically new and superior value, making existing competitive product or service attributes increasingly irrelevant or inadequate (ibid).

3.7.2 Value Based Innovation (VBI)

Value Based Innovation (Fernandes and Martins 2011) determines product *Value* based on two important variables; levels of *performance* (Features and functionalities) and the *price level*. The *price level* is linked to the buyer's *value perception* and *value alignment*. Creating unique product *differentiation*, product *varieties* and a *unique value curve* are core objectives and identified success criteria's (ibid).

The goal is to create a unique value curve balancing performance and price that builds competitive advantages and difficult to copy. The level of product quality demands from the target users are classified as low or high; low quality demands are easier to create without special attributes to match the user expectations. High product quality demand results in increased difficulty to manage to reach user expectations. The levels will change over time and are highly different within different types of innovations. Core quality factors identified are; functionality, operational usage (Utilization), design (Prestige & brand positioning), reliability and availability (ibid).

In addition, product differentiation with varieties of the same product serves a much broader range of the market, i.e. low end and high end products.

Another goal with VBI is to create a high degree of differentiation; preferable vertical differentiation creating a new or different and premium value for customers/users, opposite to horizontal differentiation when the main goal is to create low priced products as disruptive force into a market. Identifying and creating the optimal value curve will have an impact on product margin and contribute to enhanced profitability (ibid).

Value Based Innovation points out 4 core disruptive characteristics adopting Clay Christensen's principals (ibid);

1. New and cheaper technology but with less features (Technology disruption).
2. Pure low price disruption with downscaled product features.
3. Disruption through low cost development increasing the profit margin.
4. Market disruption through a high level of uniqueness (Innovation level), difficult to copy the same features, performance and price by followers.

Segmenting the markets and creating a range of differentiated and unique product varieties empower the perceived byer's value alignment from low end (Commodity) to high end markets (Premium) and in total hitting a bigger chunk of the niche or mass markets. Product varieties (I.e. Free + Premium app versions) creates different value levels; the low end (Commodity) product is cheaper, easier and faster to develop, but serves a market environment with lower growth potential and many competitors.

The high end superior (Premium) product target a market niche with higher growth potential with less or no competition, but this development path is often more costly to develop, more complex and longer time-to-market. But the premium product gain better profit margins. Break-even analyzes will support the innovation strategy and direction between the two approaches. Analyzing markets and existing products helps app manager's strategically creative thinking choosing on innovation archetype development path to pursue speed of user adoption, higher growth and profitability. When VBI strategy is deployed successfully the app owner have identified and created a new unique value curve (Innovation Hot Spot).

The core idea of **V**alue **B**ased **I**nnovation (VBI) is to bring innovation to organizations' operational level, so it is easier to take managerial actions and to perform optimal innovation management deploying advantages.

Figure 7. Consumer pyramid and preferred products (Fernandes and Martins 2011 p. 872).

Pursuing creating disruptive innovations can lead to a high level of competitive advantage, targeting a bigger potential of adopters; *"However, a truly disruptive product serves not only the base of the pyramid* (Figure 7) *but also the middle section. This provides any real disruptive product with a greater chance of success. There are always consumers at the top of the pyramid looking for more complex solutions and higher performance products, who will never adopt the disruptive product, unless the previous one disappears from the market"* (Fernandes and Martins 2011 p. 871).

With a Value Based Innovation model it is possible to identify four different innovation moments during the product's life cycle: *"(1) the initial* (Radical*) innovation that has created the product in the first instance; (2) the sustainable innovation corresponding to the continuous improvement* (Innovations built on innovations) *of the product; (3) the creation of different qualitative levels* (I.e.: Product diversity; Free, low-end, high-end, add-on versions)*, including the premium level; and (4) the creation of a new alternative product for many*

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consumers (Similar to Blue Ocean Strategy) *through the disruption movement*" (Fernandes and Martins 2011 p. 872). These attributes define the Value Based Innovation model.

The product innovation value, performance level and price perception from target customers must as early as possible be determined, assessing these variables will help decision processes and strategically directions and development path.

Using assessment techniques together with an external focus group (Test pilots) representing the target market space will enhance the work prioritizing product features, innovation value and levels together with pricing strategies: "*That should be also the method that companies must use to appraise the performance of their products' attributes, creating a value curve* (Same approach with BOS) *for their products that can also be compared with their competitors' performances*" (Fernandes and Martins 2011 p. 873).

Different innovation types (Archetypes), levels and complexity are categorized as the following innovation archetypes for value creation; adapting and transforming Christensen's principals VBI introduces 4 innovation archetypes for value creation; (1) breakthrough; (2) turning-around; (3) adding-value; and (4) up-grading. These archetypes and the differences in value alignment are presented in figure 8.
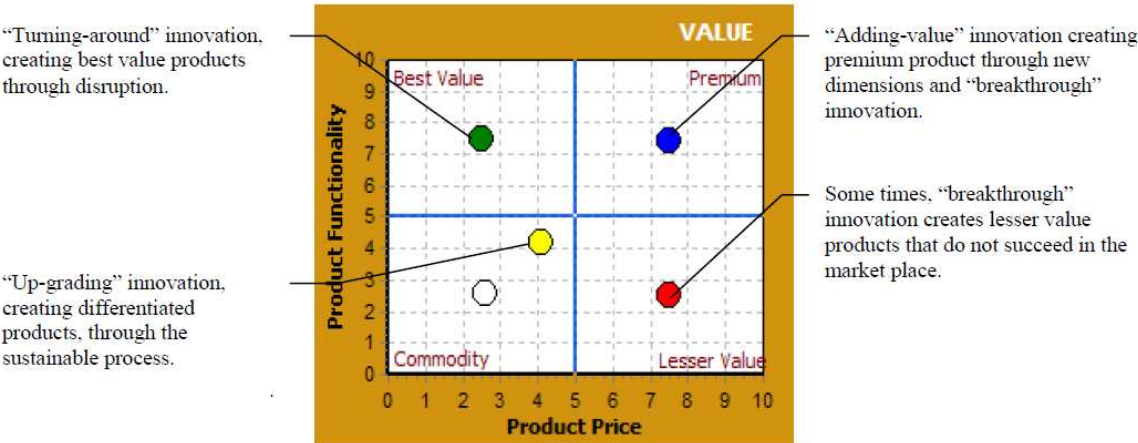
Figure 8. Innovation archetypes and value alignment (Fernandes and Martins 2011 p. 876).

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Successful implementation of VBI always balance the innovation value (i.e. innovation levels & complexity) with the buyer's value alignment from start of the innovation process. This avoid launching innovations that is to complex hence the user experience or not adjusted to the target users' needs or compatibility (Byers et al. 2011). The buyer's value alignment should be checked out early in the development of the innovation and therefor launched with a pre-checked and acceptable price tag from launch.

3.7.3 Planning Disruptive innovation

What many entrepreneurs wants with their brand new B2B app or re-launches or feature updates, is to create disruption for their competitors, or disruption for synonymous software on other platforms (I.e. Mature or commoditized desktop software). "*Disruptive innovation is important because of its impact. Recall that disruptive innovation is defined simply as innovation that disrupts the current infrastructure and market structure of an industry or even several related industries*" (Giglierano et al. 2011 p. 4). This is an important part of especially the commercialization and diffusion of disruptive app innovations. The approaches argued from Clayton Christensen, Geoffrey Moore and Everett Rogers has evolved up to today's social media revolution that creates new opportunities to boost and manage diffusion and user adoption, never existed before in the industrial era.

Giglierano et al. (2011 p. 31) points out in their research that the following areas are crucial capabilities within business development in early planning of disruptive innovations:

- *Proactive* orientation
- *Opportunity*-driven
- *Customer* intensity
- Innovation-focused
- Risk Management
- Resource leveraging
- Value creation

Creating new markets with disruptive innovations

Core strategies are identified: *discovery*-driven, pre-planning of innovation value with early assessment and *feedback*, *activity*-driven, *unique* value propositions, creation of repeatedly innovation-driven growth processes (Christensen et al. 2003).

To create new markets with disruptive innovations the following six keys of strategies are identified and highlighted (ibid):

1. Disruptive innovations spur growth
2. Disruptive businesses either create new markets or take the low end of an established market
3. Disruptive opportunities require a separate business-planning process (Hence the proposed 7 stepss Value-centric Innovation strategy model)
4. Don't try to change your customers—help them
5. Integrate across whatever is not good enough
6. Be patient for growth but impatient for profitability

"*When companies keep improving their existing products and services to meet their best customers' needs, they eventually run into the "innovator's dilemma." By doing everything right, they create opportunities for new companies to take their markets away. Established companies historically have struggled when trying to create new markets. Success seems fleeting and unpredictable*" (ibid).

Hence financial parameters; investors, owners and managers must be patient for growth but impatient for profitability; pursuing early profitability pushes the new disruptive business to find the markets where its unique product innovation value will be aligned with the buyer's value perception (ibid).

The literature review revealed five disruption types:

- Radical technological disruption (A radical technological disruption pave way as a Game changer)
- Low pricing disruption (The common choice creating incremental innovations disrupting incumbents lowering the existing price level)
- *Free* disruption (The common choice used for both radical and incremental innovations disrupting incumbents)
- Market disruption (When product features, price, or free models increasingly are homogenous, smart marketing is key to disrupt)
- Creative disruption (When all attributes are close to equal or synonymously or "good enough", creative campaigns are used to disrupt)

Creative disruption (The literature review provides insights that lead to the assumption that creative disruption is the weapon of choice when; technology, features, quality and price are increasingly homogenous. Therefor is creative disruption the way to pursue within app stores and closed ecosystems.

To create new markets with disruptive innovations the following core strategies are proposed: discovery-driven; pre-planning of innovation value with early assessment and feedback, activity-driven, create new markets with unique value propositions, create repeatedly innovation-driven processes.

Value-centric innovation creates a leap in value, creating a radical value-centric innovation (Regardless innovation type), and creates a unique value curve and uncontested (Or unserved market niche) market spot, and therefor avoids head-to-head competition.

How to fight disruption & disruptors

With a framework (Wessel and Christensen 2012) pinpointing *existing* vulnerabilities to disruption, identifying strengths and weaknesses, it is possible to address and deploy actionable tactics defending disruption.

Disruption can occur quickly and totally damaging, or more slowly and less damaging. By analyzing existing and future potential scenarios and disruptive features from others, businesses can enhance their relative advantages. Strategically assessments of disrupter's business and revenue stream model, (and marketing and price strategies and tactics) and the nature of the opportunity that the disrupter can explore and damage existing and future

competitive advantages. With a framework pinpointing existing vulnerabilities to disruption, identifying strengths and weaknesses, so it is possible to address and deploy actionable tactics defending disruption. This way it is possible to create bigger barriers for disruptions, identifying the *extendable core* of the disruptor including their value creation, value propositions and their byer's value perception and how their monetization models work. The tactics are to create a highest possible level of barrier, and/or many diversified barriers. Successful entrepreneurs have an *opportunity driven business* approach to identify and deliver real value for their target market and customers. Products not being adaptable to disruption may lead businesses to develop new products that cannibalize their own existing disrupted product, but this way they encounter the disrupter with own disruption (ibid).

How to fight commoditization?

How is it possible to fight commoditization, and deploy tactics that overcome this common hurdle? Modern Product-Life-Cycles experiences high speed from launch to maturity, and when a product mature, it become more susceptible to the forces of commoditization. Quelch (2007) identifies several common causes to commoditization: *"Global competition, outsourcing, nearshoring and offshoring are all squeezing margins, increasing customer price sensitivity, and making it harder to sustain inter-brand differentiation"*. There is three successful tactics to consider reducing the risk for and delaying product commoditization (Quelch 2007):

- Innovate
- Bundle
- Market segmenting

Quelch (2007) describes the three tactics:

- Innovate: A new product that better meets consumer needs, even an upgrade of an existing product, can one-up competitors and force them to invest in matching or exceeding the new specifications.
- Bundle: Selling a commoditized product with differentiated ancillary
- Segment: Mature markets are large markets that can be divided profitably into multiple segments. Marketers can focus on providing applications expertise for less price-sensitive customer segments for whom the product is still important.

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When operation in a market with lots of me-too products, overcapacity, either fighting against Freemium models and/or frequent price cuts? How can you make sustainable profitability? *"The advices are to; Decide which customers or markets you do NOT want to serve. You will lose market share but improve profitability. Focus on profit margin, not sales revenues"* (Quelch 2007). Another way to avoid commoditization is with BOS – and rather focuses on uncontested market space. *"However you approach commoditization, try to innovate at all costs to beat it back"* (Quelch 2007).

Free your children before someone eats them

Max McKeown (2008) takes another approach regarding cannibalization: *"Evidence shows that companies that are willing to cannibalize their own products, or eat their own children, are most likely to create radical new products. If you don't replace your own product someone else will!"* (McKeown 2008 p. 88).

So there are different effects for creating incremental innovations for existing products, versus product exit and then release new radical innovative products. *"Ignoring the future is easier on the brain but it makes investing in the future harder. You don't know what will happen but you must assume that doing nothing new will make things worse. You cannot maintain the status quo so the only way of maintaining your status in the future is to make innovation investments now"* (McKeown 2008 p. 108).

Surviving disruption

Planning for future disruption should be any app company or developer's part of their innovation strategy. Disruption will occur before or later, either from new first-movers with new breakthrough radical innovations or followers with incremental innovations (McKeown 2008; Smith 2010; Hughes 2011).

Disruption discovery assessment

To be able to determine how different kind of (Technological, business model, market or creative) disruption can hurt your future business, a disruption discovery assessment should be performed. Such assessment is exemplified below (Christensen 2003; McKeown 2008):

- Identify the strengths of your disrupter's business model or price model
- Identify your own competitive advantages (Innovation value & price value, USPs)
- Assess the conditions that would hinder the disrupter from adopting your current competitive advantages in the future
- Pursue tactics based on the assessment that reduce or make the disrupters strategies inadequate

Foreseeing the future is of course not possible, but after performing a disruption discovery assessment simultaneously when developing new apps or re-innovations reduce the risks for being early disrupted from competitors or new entrants. *"Pretending to have control where no control is possible is a self-defeating delusion"* (McKeown 2008 p. 226). This task should be added to existing Innovation Management operations.

Innovation Value Assessment Analysis

The idea of innovation characteristics and the importance to deliver products or services that people easily can relate to (Value alignment) are further described by Byers et al. (2011 p. 268) with obvious practical applications for value innovation assessment and evaluation:

- **Relative advantage**: the perceived superiority of an innovation over the current product or solution it would replace. This advantage can take the form of economic benefits to the adopter or better performance.
- **Compatibility**: the perceived fit of an innovation with a potential adopter's existing values, know-how, experiences, and practices.
- **Complexity**: the extent to which an innovation is perceived to be difficult to understand or use. The higher the degree of perceived complexity, the slower the rate of adoption.
- **Trialability**: the extent to which a potential adopter can experience or experiment with the innovation before adopting it. (I.e. with help of Trials and Free versions). The greater the trialability, the higher the rate of adoption.

3.7.4 Blue Ocean Strategy (BOS)

Blue Ocean Strategy (BOS) (Kim and Mauborgne 2005a; 2005b) is about identifying new *uncontested* market *space* creation a unique innovation curve (Unique Innovation Hot Spot) that make *competitors* increasingly *irrelevant* or *inadequate*. BOS don't use the competitors as benchmarking. BOS offer a holistic framework for assessing both internal and external issues. This paper emphasize and address the external assessments.

The profit model of BOS utilize how Value Innovation contribute to increased profit by using assessments of the three levels of strategic price, target cost and pricing innovation.

A wide range of strategically assessments are offered with this managerial framework; BOS consist of 3 core elements: Strategy Canvas, Four Actions Framework (Eliminate > Reduce > Raise > Create) and Three Characteristics.

BOS presents the following strategy formulation principles (ibid):

•   Reconstruct market boundaries

•   Focus on the big picture, not the numbers

•   Reach beyond existing demand

•   Get the strategic sequence right

BOS presents the following strategy-to-execution principles:

•   Overcome key organizational hurdles

•   Build execution into strategy

How make product launches avoiding head-to-head competition? They argue that head-to-head competition results in nothing but a bloody red ocean as rivals fight over shrinking profits. Success comes not from battling competitors or rivalry, but from making the competition irrelevant by creating ''Blue Oceans'' of uncontested market space.

The creators of Blue Oceans don't use the competition as their benchmark. Instead, they follow a different strategic logic that they call value innovation. Value innovation is the cornerstone of Blue Ocean Strategy. They call it value innovation because instead of focusing on beating the competition in existing market space, you focus on getting out of existing market boundaries by creating a leap in value for buyers and your company which leaves the competition behind (ibid).

BOS directs the awareness of avoiding (mass) competition as well as generating more revenue streams and increased profit. BOS urge both focusing on eliminating old or unnecessary ways of doing business; reducing costs wherever possible, raise the quality of products or services and to create totally new (Premium/high value) innovative products or services. Succeeding within these areas increase the success rate, and then it is possible to avoid rivalry with creating a new market space. All these factors matched and compared to the existing industry to be able to point out the (new) strategic path cruising the Blue Ocean (ibid). Let's look at some core parts of the framework of BOS in the next sections.

Six principles of Blue Ocean Strategy:

BOS presents the following formulation principles (ibid):

- Reconstruct market boundaries
- Focus on the big picture, not the numbers
- Reach beyond existing demand
- Get the strategic sequence right

BOS presents the following execution principles (ibid):

- Overcome key organizational hurdles
- Build execution into strategy

BOS offer all companies who applied Blue Ocean Strategy an absolutely merit: No set rules. Very rare other target market players are privileged to make structures and regulations in

this niche market defined with BOS; in addition, the whole part of profits produced on extra demands will be pretty considerable and merely be separated by very few competitors, if any. So, extra demands are the ones waited to be discovered and the only way to approach them dependent on the level of differentiation and low cost, which will build a relationship with the value based innovation (Figure 9). With this symmetrical pattern, Value Innovation and boundary are two integrally factors being required, no one can be excluded from the other (ibid).

Figure 9. Value Innovation - Cost savings & Buyer value. Source: http://www.blueoceanstrategy.com/concepts/bos-tools/value-innovation/

BOS analytical tools are called; Strategy Canvas, Four Actions Framework (Eliminate > Reduce > Raise > Create) and Three Characteristics. Let's take a brief look into their design and purpose:

Blue Ocean Strategy Canvas

The Strategy Canvas is a tool to compare a company's offering level and competing factors, figure 10. The Strategy Canvas is both an assessment tool and an action framework for building a sound Blue Ocean strategy, and it captures the current status-quo in the existing/target market space. The Strategy Canvas is a graphic depiction of a company's

relative performance across its industry's factors of competition. It allows strategists to clearly see the factors that one industry competes on and where the competition currently invests and push users to reorienting focus from competitors to alternatives and from customers to noncustomers of the industry (Kim and Mauborgne 2005a).
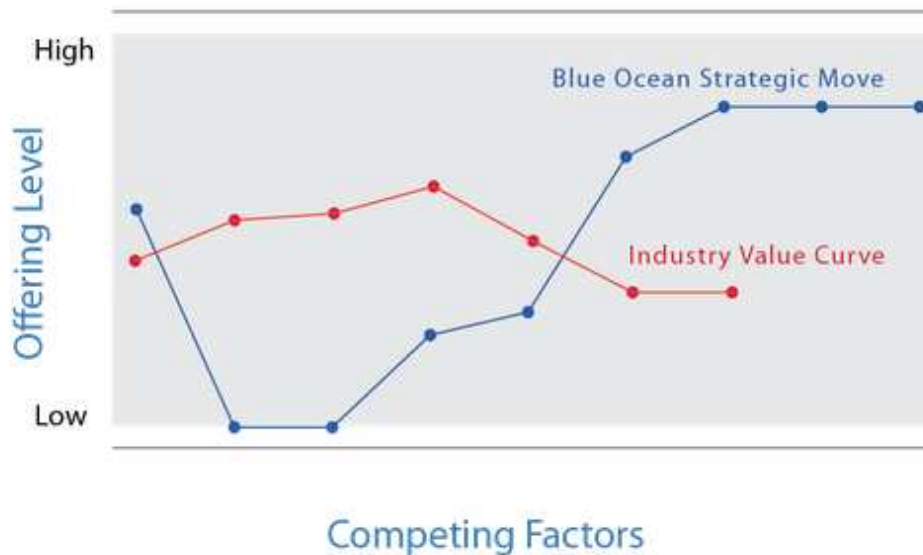
Figure 10. Blue Ocean Strategy Canvas. Source: http://www.blueoceanstrategy.com/concepts/bos-tools/strategy-canvas/

The four actions framework

The next strategically step is the four actions framework (Kim and Mauborgne 2005a); the Eliminate-Reduce-Raise-Create grid (ERRC). The ERRC model mainly forces managers to systematically pursue differentiation with high value innovation and low costs. It scrutinizes every factor their industry (niche) competes on, helping managers to discover the range of implicit assumptions they make related to competitive advantages. It is easily to interpret and operationalize by managers at any level so that it creates a high level of engagement and commitment throughout the company (ibid).

The four strategic aspects are, figure 11:
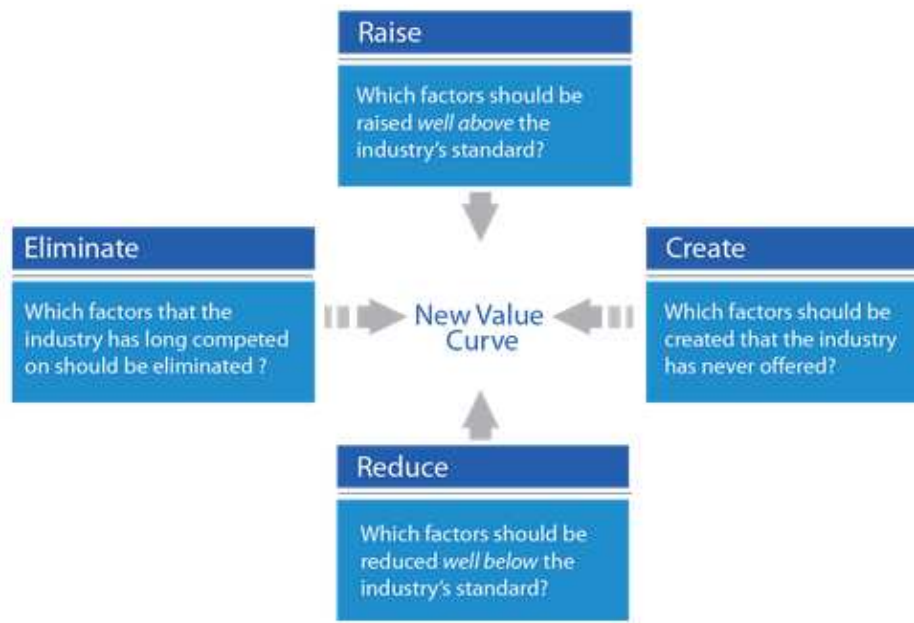
The six paths framework:

The Blue Ocean six paths are significant different than Red Ocean approach (Kim and Mauborgne (2005a), table 5:

• Path 1: Look cross alternative industries

• Path 2: Look across strategic groups within industries

• Path 3: Look across the chain of buyers

• Path 4: Look across complementary product and service offerings

• Path 5: Look across functional or *emotional* appeal to buyers

• Path 6: Look across time

Table 5. BOS Six Paths Framework. Source: http://www.blueoceanstrategy.com/concepts/bos-tools/six-paths/

Three tiers of noncustomers

The last part of the BOS framework this paper looks into is the 3 tiers of noncustomers (Kim and Mauborgne (2005a), figure 12:

1. First-tier noncustomers: soon-to-be noncustomers

2. Second-tier noncustomers: refusing noncustomers

3. Third-tier noncustomers: unexplored noncustomers
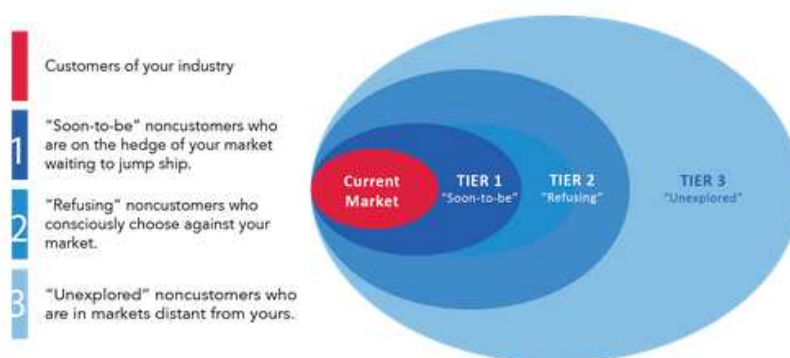
Figure 12. 3 Tiers of noncustomers. Source: http://www.blueoceanstrategy.com/concepts/bos-tools/3-tiers-of-noncustomers/

The 3 tiers of noncustomers contain 3 aspects (ibid):

Focus: Every strategy needs purpose and focus. Here it can be expressed as some certain aspects aimed to overcome or improve, what is more, those aspects have already been your advantages. Raising the significance of them is intended to make them as the most attractive characters of the company (Ibid).

Divergence: Any successful business has bravery to be different from others. Blue Ocean Strategy give strategists something to re-think: To think the others never thought, to do others never thought. To do the others never did. Spirit of innovation would always lead you stand out from the mass market and make you the first choice of clients (Ibid).

Compelling Tagline: A good tagline must not only deliver a clear message but also advertise an offering truthfully, or else customers will lose trust and interest. In fact, a good way to test the effectiveness and strength of a strategy is to look at whether it contains a strong and authentic tagline (Ibid). The tactical trick with 3 Tiers of noncustomers is to go for the biggest potential market!

Sequence of BOS

It is very important to get the strategic sequence right when assessing the BOS framework, figure 13. If all 4 attributes are approved = A commercially viable Blue Ocean idea (ibid).

Figure 13. Sequence of the BOS framework. Source: http://www.blueoceanstrategy.com/concepts/bos-tools/sequence-of-bos/

Profit model of BOS monetizing Value Innovation

BOS indicates that to maximize the profit margin potential of a Blue Ocean idea, the equation is the strategic price minus the target cost (figure 14). Managers must focus on solutions to reduce the target cost with use of the Eliminate-Reduce-Raise-Create grid (ERRC). Then focus on new operations and introducing cost innovations from development to distribution. Then find out ways to reduce development costs. Another alternative way to reduce target cost is via partnering (I.e.: Near or Off-Shoring) or smarter use of both technology and project methods.

Figure 14. BOS Profit Model. Source: http://www.blueoceanstrategy.com/concepts/

The profit model of BOS utilize how value innovation contribute to increased profit by using assessments of the three levels of strategic price, target cost and pricing innovation.

App Competitor Analysis

The Value-centric innovation strategy must have a section with competitor assessments. After screening the target app market it is possible to identify existing players. The process of screening Apple's App store and/or Google Play is a time consuming but important task hence the big numbers of apps and to analyze those identified apps if and how they are already delivering any synonymous functionality.

Competitor analyses should be an early task in any strategy as well. This way it will be able to analyze existing apps both regarding innovation value and price value, and can early on figure out the price level for your app, and then create a fundament for budgeting regarding both costs and sales. A holistic competitor analysis should assess; market, product value, innovation value, price value and should include the following areas (Hughes 2011; Osterwalder and Pigneur 2010):

- App market screening – Objective: Identify and analyze via app stores and/or web apps outside stores, detecting existing apps innovation value and price value
- Market SWOT analysis – Objective: Identify and analyze existing players in target market(s)
- Product SWOT analysis – Objective: Identify and analyze competitors product innovation capabilities and benefits
- User ratings & reviews – Objective: What does the app competitor's end users say in app store reviews and in social media?

After performing such competitor and product analyses, these assessments will bring invaluable insights to focus and create value based (Kim and Mauborgne 1999, 2005a; 2005b) app innovations. *"Building an app that clearly fills a need to a particular audience allows you to deliver very concise message to an audience that understands your app's value from the beginning. Not having to convince potential byers that they need your app is 80% of the battle"* (Hughes 2011 p. 243).

App strategic profit objectives

The focus has shifted from Cost-Per-Acquisition (CPA) to clearly defined profit related objectives and measurements. After decided on the business model and revenue stream model(s) it is possible to calculate both costs, sales and profit objectives. Hughes (2011) points out the following considerations:

- Calculate the Break-Even Units and Point (Median half-life = 6 months for PPD business apps)
- Calculate the predictions for profit & loss scenario for the first 3, 6 and 12 months
- Calculate how much of the future profit that must be reinvested in new app releases
- Calculate how much of the future profit that must be invested in marketing and PR

These calculations must be based on the qualified predictions and forecasts of sales and download or subscription adoptions. After performing both Break-Even Sales and Break-Even Units including fixed costs, variable costs and fee to App stores for native apps, it will give enhanced knowledge to support predictions for revenue stream and profit objectives (ibid).

While the user acquisition costs rises exponentially with each App Store rank gained, the revenue does not. Therefore will i.e.: Among Top 25 position might be more profitable than reaching the Top 5 spot. Monitor the analytics results during and after the boost campaign to find your app's ideal target rank regarding profit margin (Trademob 2013), figure 15:

Figure 15. User & profit maximizing zone. Source: Trademob (2013).

App strategic price objectives

Strategic pricing of a new B2B/Business app is maybe one of the most important factors for diffusion and user adoption success (Fernandes and Martins 2011; Kim and Mauborgne 2005a; 2005b; Hughes 2011). App pricing depends on several factors; is the B2B app first to market with a first-mover approach, or targeting existing market with a follower approach? After performing market and product SWOT analysis, it will lead to updated insights about competitors and their app pricing strategies, their app user ratings & reviews and general perceptions and buzz in social media.

When a first-mover can set the pricing tag as high as possible, the follower can take several considerations and tactical approaches. Hughes (2011 p. 249) points out the following considerations:

- Focus on the weakness of existing competitors by offering higher innovation value and price value
- Survey a sampling of potential customers/users to get their perceptions about quality, benefits and price levels from existing apps in the market. If creating a new market assess the same factors.
- Focus on the cost/benefits of the app to decide on the app pricing from launch

It is almost impossible to raise the price after a while, reducing the price is easy (ibid). Focusing on *horizontal differentiation* (Fernandes and Martins 2011) is mainly the app follower's dilemma when entering new markets.

Set realistic sales targets

After agreement on the app development and marketing cost budgets and analyzing both Break-Even Sales/Units, and in addition to learn about the target market existing price levels, it is possible to start to make more accurate sales forecasts and cash-flow scenarios (Hughes 2011). When taking the first-mover approach with radical app innovations, it is possible to start in the higher price tag range. But with a follower approach with incremental app innovations, the existing app market and competitors give insights to decide on optimized price tactics.

3.7.5. Transient Advantage

McGrath (2013 p. 64) argues that strategy is stuck: "*For too long the business world has been obsessed with the notion of building a sustainable competitive advantage. I'm not arguing that it's a bad idea – obviously, it's marvelous to compete in a way that other can't imitate*".

The purpose of a *transient advantage* strategically approach are; to stay ahead of the pack, businesses need to constantly explore and create many new strategically *initiatives at once*. McGrath (2013) further pinpoints *"that both competitors and customers have become too unpredictable and industries to amorphous"* (ibid). Innovation Management plays a key role;

with a systematically Strategy-to-Execution (S2E) process is critical to create and maintain transient competitive advantages (ibid).

These forces determine factors of the digital revolution, low entry barriers, globalization and business transparency (Waldman 2010; Haugestad 2010). Today it's rare for a company or product to maintain a truly lasting advantage. Today where a competitive advantage very often evaporates in less than a year or two (Or even months for apps), companies must re-innovate, creating and exploiting not one but many transient (Temporarily) competitive advantages simultaneously (ibid) (Figure 16):

THE WAVE OF TRANSIENT ADVANTAGE

Companies in high-velocity industries must learn to cycle rapidly through the stages of competitive advantage. They also need the capacity to develop and manage a pipeline of initiatives, since many will be short-lived.

RETURNS

LAUNCH   RAMP UP   EXPLOIT   RECONFIGURE   DISENGAGE
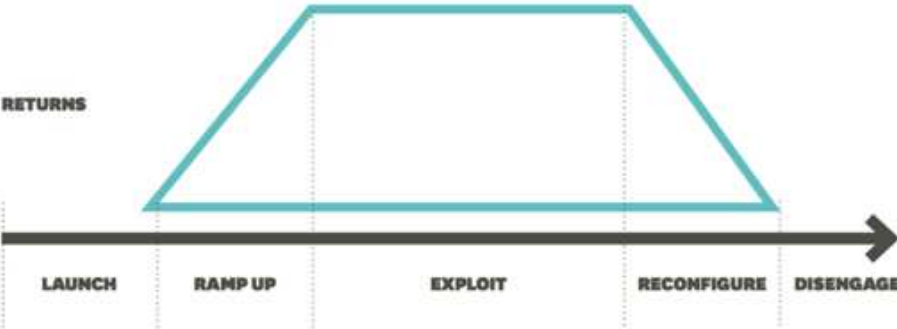
Figure 16. The cyclic model of Transient advantage (McGrath 2013)

Continuous Innovation Management with focused and systematically Strategy-to-Execution (S2E) process is critical to create and maintain transient competitive advantages (Figure 17):

Figure 17. Continuous Innovation Management with sound and focused Strategy-to-Execution (McGrath 2013).

The characteristics from a transient advantage is quite similar to what Nordström and Ridderstråle (2002) support with their book and term; *Funky Business*, they argue that only temporarily competitive serial monopolies are possible to create. App owners and app entrepreneurs need to acknowledge that stability or long term competitive edge is not the norm. The essence insights from McGrath (2013) is that companies do need to constantly put time aside to discuss new strategic ideas and manage external flux and changes and to focus on user or customer centric value and community engagement.

The goal is to create many (complementary) *coexisting temporary* competitive advantages as a *portfolio of advantages* that will empower the business in a flux world. Core managerial attributes must be able to fast be adaptable to external changes, reconfigure existing advantages, and use creativity, market and competitor analysis to create new ones. Businesses must learn faster, create new strategies and deploy new activities faster than before. New competitive advantages must be created quickly, and abandoned just as quickly. Competitive advantages must be built in iterative cycles (ibid).

Organizations mastering creating transient advantages must have a high degree of absorptive capacity to succeed, and willingly to assess their current or lost advantages with strategically questions such as;

- Does our customers/users easily find cheaper or simpler products/ services that their value alignment are stated as "good enough"?
- Does our customers/users state that they are not excited about what we offer anymore? Is our product become a commodity?
- Do we experience that competition are growing and that new players disrupt our products or services?

Follower not first-mover strategies are more successful today than before. Continuously innovation and re-innovations to make a wave of bundled transient advantages is the answer to survive in high pace and flux markets. Clearly defined organizational structure, software systems, roles and responsibility for Innovation Management are another success areas. "*Speed is paramount. Fast and roughly right decision making must replace deliberations that are precise but slow!*" (McGrath 2013 p. 70).

Transient advantage have its similarities to earlier strategically approach elaborated by Nordström and Ridderstråle (2002); sustainable competitive advantage are replaced with shorter periods with serial monopolies. The value curve and markets changes in a high pace, so must the business model and competitive advantages must be built and adapted to market changes continuously for shorter time frames before they are renewed.

Max McKeown (2008) says it this way: *"You cannot control waves, so learn to surf!"* The ability to put operational resources and time to innovation management are crucial success factors. Transient advantage strategy is about always spotting for new serial advantages, flexible organization, experimental focus, rapid product iterations and fast learning from failure. It is not about analyzing the status quo, it is not just about what the competitors are doing; it is about always exploiting new opportunities (Opportunity-driven innovation), and creating new markets with a range of continuously renewed advantages.

3.7.6 Innovation adoption cycles: First-Mover & Blue Ocean VS. Followers & Red Ocean

Combining First-Mover VS. Follower theory with Roger's Innovation Adoption Cycle and knowledge about Blue and Red ocean approaches gives invaluable insights. These theories explain how different strategically innovation approaches give different; cost structure, time to market, product or technology maturity of target users, competitor or new entrant behavior, disruptive behaviors and price tactics, and how these areas are correlated. These innovation mechanisms are easily adaptable supporting insights for B2B app Product-Life-Cycles. Assembling these core theories are conceptualized and visualized in figure 18:

First-Mover's temporary Monopoly I		First-Mover's temporary Monopoly II		Next serial Monopoly Future curve

G r o w t h

Blue-Ocean

Head to head Competiton Red-ocean

Blue-Ocean

Head to head competiton in the Red-ocean. App technology and markets are more mature, hitting also early, late majority and laggards before the market is saturated (Punctuated equilibrium) and growth, prices and revenue streams falls.

Time

| First-Mover with radical app innovation 1 Value Based / strategy | Follower Entry with incremental App innovation 1 & Red-Ocean strategy | First-Mover with app re-innovation 1 Value Based / Blue-Ocean strategy | Follower Entry with incremental App innovation 2 & Red-Ocean strategy | |

Market or technology or creative disruption from new entrants

Figure 18. Assembling Roger's theory with Blue-Ocean/First-Mover and Red-Ocean/Follower strategy

3.7.7 Innovation Management

Innovation input sources

There are several common B2B innovation input sources (Byers et al. 2011; Smith 2010):

- Market pull
- Technology push
- Business productivity, extending or transforming businesses
- Customers
- Internal organizational R&D and creativity
- Partners & Collaboration
- Open innovation or hybrid (I.e.: login provided via App community)

The market demand (market pull) is one app innovation strategy, where initiative comes from the market and users. Customers often demands for more effective applications for information, productivity and collaboration. Competitors initiate successful new products. Internal and external sources of information can create new ideas from market trends.

New technology change and innovations can push new solutions into a market space. According to Berkhout's Cyclic Innovation Model (CIM), four "nodes of change" that are responsible for affecting the rate of innovation in a company (Berkhout et al. 2005), figure 19:
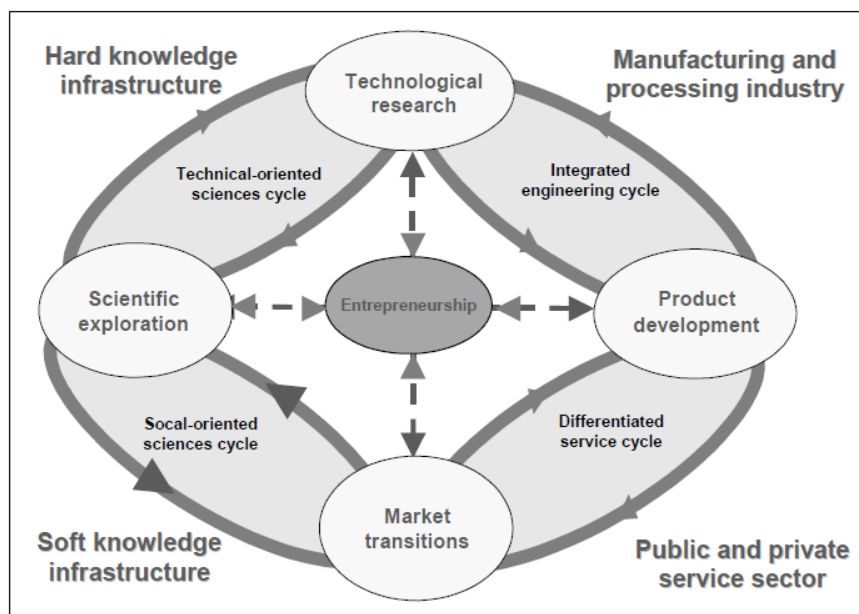
Figure 19. Berkhout's Cyclic Innovation Model (Berkhout et al. 2005 p. 397).

Mobile Maturity Assessment of target enterprise or B2B market

The mobile app world is experiencing a wave of transformation with the emergence of new players, changing roles of existing players, changing technology and the creation of new business models. To be able to match the level and complexity of new apps is it important to understand the compatibility (Buyers et al. 2011) of the adopters within the target market and related industry. Performing mobile maturity assessment of the market space defined, should give actionable insights for how to build value-centric innovations. Urban Airship pinpoints that small and medium sized companies are far more nimble and adaptable to use new (transforming) apps, figure 20:

[Figure 6]: Our demographic analysis also revealed that large companies do not tend to rank higher in our Mobile Maturity Model than small companies.

While larger companies have more resources overall, smaller organizations might be more nimble to embrace mobile or give it greater focus.

■ $1B+
■ $50M - $999M
■ $1M - $49M
■ <$1M
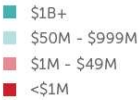
6. Does revenue/company size correlate to higher-stage Mobile Maturity?
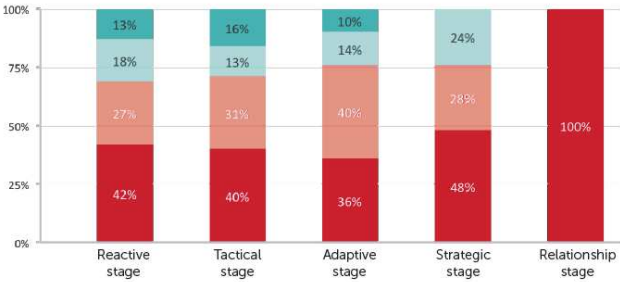
Figure 20. Mobile Maturity Benchmarks Report. Source: Urban Airship 2014.

Another insight provided by Urban Airship (2014), is who leads mobile strategy (Figure 22) within different industries. This kind of information can contribute to creating more powerful and direct value proposition and USPs when app targets i.e. retail, food and travel where 15% outsource mobile strategy to external agencies and 48% are doing it on case-by-case basis. These type of industry report insights can provide strategic direction for market segmentation and for decision making about innovation level & complexity for app owners and app entrepreneurs.

Extending or transforming app innovation paths

There are endless combinations of B2B/business app innovation approaches, levels and combinations. But to simplify the B2B/business and enterprise mobile app scenario there are two main approaches; Apps that extend (systems, routines, capabilities or resources) the

enterprise, and apps that transform (systems, routines, capabilities or resources) the enterprise.

Extending the enterprise can i.e. be within systems such as e-mail, CRM or partner databases, intranet, product catalogues etc. Transforming enterprises meaning deploying totally new ways of how they i.e. are doing business, communicate, collaborate or learn inside the organization. Extending apps most often are incremental innovations building on existing desktop software and platforms.

Transforming apps are most often radical innovations, but of course both approaches can feel radical for the users. Two examples of extending the enterprise with mobile app solutions are within CRM and ERP providers. Salesforce help their customers <u>extend</u> their existing cloud based CRM products with a cloud based app creation platform to build customized mobile apps

(Source: <u>http://www.salesforce.com/platform/overview/?d=70130000000lTIo&internal=true</u>).

One example of a new B2B app provider who wants to <u>transform</u> how businesses create their business strategy and business plan is StratPad (Source: <u>http://www.stratpad.com/</u>).

Analysis by Ogilvy (Stokvis 2012) show that B2B brands having the greatest impact within three areas:

1. Mobilizing marketing: Engaging B2B audiences in new ways by connecting offline with online, deploying location-based content and delivering content via mobile search and display.

2. Mobilizing the enterprise: Enabling employees to be more productive and the sales force to be more effective by, for example, providing interactive, data-driven presentations and case studies wherever they are.

3. Mobilizing products and services: Giving the customer greater value with mobilized products and services, such as mobile product manuals, mobile customer support, mobile product management, mobile order management, mCommerce and mobile sales enablement for distribution partners.

B2B App innovation levels and complexity, development paths and innovation types together with examples of extending and transforming innovations are exemplified in table 6:

B2B App Innovation levels, development paths and innovation types

B2B App innovation paths	Extend the enterprise Innovation level	Transform the enterprise Innovation level
App Innovation features: Productivity/WorkFlow Knowledge Communication (extra/intra web) Transaction Collaborative Social & Engagement Reporting	Low **Adding Value innovation** **Adding Value innovation** **Adding Value innovation** **Adding Value innovation**	High **Turning around innovation** **Turning around innovation** **Turning around innovation**
Strategically approach	**Follower**	**First Mover**
Innovation type	**Incremental**	**Radical**
Innovation level	**Low**	**High**
Integration complexity Push / Pull / SDKs / APIs / SOAP/ DBs	Low	High
Mobile app technology	**Native**	**Hybrid / Web (HTML5) / Cross-Platform**
In-App complexity examples In-App; purchase / cross-selling / upgrade / ads/ push notification	**In-house databases**	**BaaS / MBaaS**
UI & UX complexity	**Low**	**High**
Back-End complexity	**Databases**	**BaaS / MBaaS**
Disruptive impact	**Low**	**High**
Enterprise Mobility Maturity level	**Low**	**High**

Table 6. Example of B2B/business innovation levels, innovation archetypes and development paths

Product Entry and Exit strategies

The differences in market structure and competitiveness have large impact on both speeding the product exit (End-Of-Life - EOL) and delaying product entry and give different possibilities for competitors and new entries. Figueiredo and Kyle 2005) The number of products in the same product market or niche significantly shortens Product-Life-Cycles.

Businesses with high innovative capacity tend to enter markets more frequently, but withdraw their products at average rates. Businesses with strong brands tend to introduce a few products and withdraw their products more slowly, monetization of a bigger mass of byers. There are several reasons for product exit (ibid):

- Products exit due to very low sales numbers
- Lack of competitive advantages (or disrupted)
- High costs of production or poorly value capturing
- Market price pressure lead to decreased profit margins
- Withdrawal of products as part of a portfolio strategy based on changing market conditions or lack of innovative capabilities
- Pulling successful product (in terms of sales and margins) from markets launching a replacement product with higher innovation value (Incremental or radical)
- Products should exit markets when marginal revenue is less than marginal cost.

Figueiredo and Kyle (2005) argue that more innovative products will survive longer in the marketplace relative to their less innovative counterparts. Introducing new products most often will result in increased sales, but when both the old product and the new one exist in the market simultaneously this can damage the sales of the old product: *"However, as the firm introduces more products, it faces competition not only from other firms' products, but also from its own. This is the cannibalization effect"* (Figueiredo and Kyle 2005 p. 7).

Of course cannibalization occurs and works differently for i.e. established companies with a wide product portfolio and for start-ups with one or very few products.

"Firms with strong brands, measured as high brand equity, are able to capture higher price premia on brand extensions into nearby product classes than are those firms without such strong brands." (Figueiredo and Kyle 2005 p. 8).

Smart marketing and branding tactics can help avoiding cannibalization effects: The impact of high brand equity versus innovativeness is showed in figure 21:

Firm Strong Brand?

	No	Yes
No	Entry: Average Exit: Average **Stagnator**	Entry: Low Exit: Slow **Marketer**
Yes	Entry: High Exit: Average **Innovator**	Entry: High Exit: Slow **Product Proliferator**

Figure 21. Innovativeness versus brand equity (Figueiredo and Kyle 2005).

Figueiredo and Kyle (2005) pinpoint: *"Companies with strong brands, on the other hand, have lower incidence of entry, and also have lower hazard rates of product exit than other firms. What happens when a firm is highly innovative and has a strong brand? These types of firms have lower exit rates for their products. That is, firms which are both innovative and have strong brands have high incidence of entry, and low rates of product exit. It is these types of firms that are product proliferators. They introduce new products and do not withdraw the older models"* (Figueiredo and Kyle 2005 p. 30).

Free your children before someone eats them

McKeown (2008) takes another approach regarding cannibalization: *"Evidence shows that companies that are willing to cannibalize their own products, or eat their own children, are most likely to create radical new products. If you don't replace your own product someone else will!"* (McKeown 2008 p. 88).

So there are different effects for creating incremental innovations for existing products, versus product exit and then release new radical innovative products. *"Ignoring the future is easier on the brain but it makes investing in the future harder. You don't know what will happen but you must assume that doing nothing new will make things worse. You cannot maintain the status quo so the only way of maintaining your status in the future is to make innovation investments now"* (McKeown 2008 p. 108).

Mobile Apps and Cannibalization

The risk for companies or app owners launching several apps, is that they are cannibalizing their own revenue stream. In marketing and innovation theory (Figueiredo and Kyle 2005), cannibalization is the decreased demand for an existing product (App #1) that occurs when its producer/creator releases a new and similar product (App #2). Existing apps will suffer a degree of erosion of sales units or market share; that erosion is referred to as cannibalization, exemplified in figure 22:
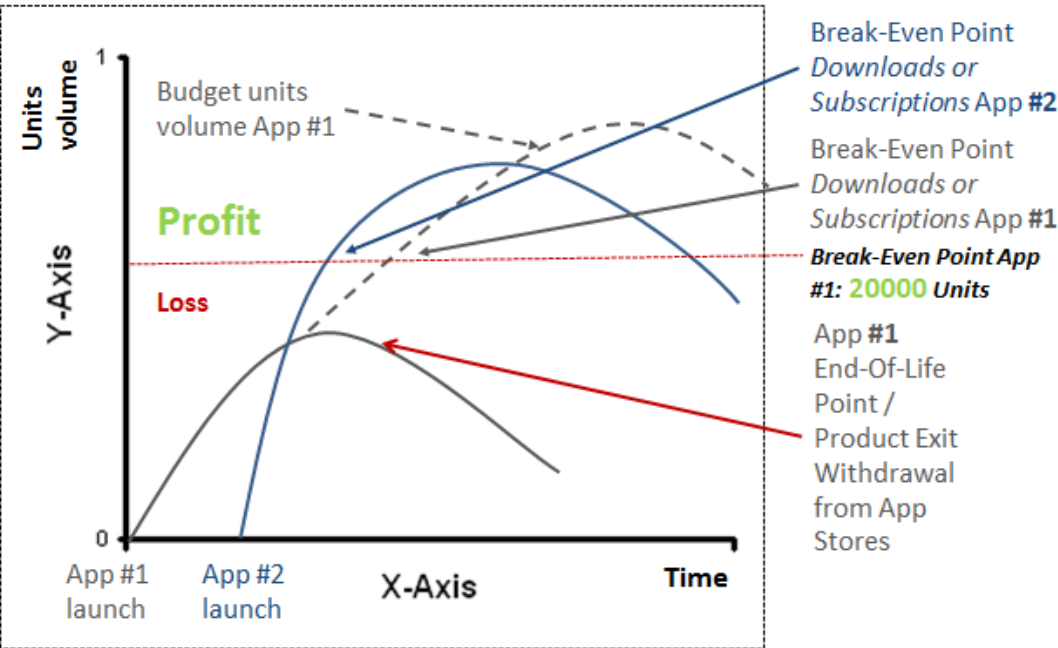
Figure 22. Example of cannibalization of existing owned app products.

When introducing and launching app #2 to early or building higher degree of value into app #2 then for app #1, new users will then focus directly to the new app because they get more features and benefits and will not consider app #1.

To avoid cannibalization with own app product releases the following can be considered, adapted from Hughes (2011 p. 213):

- Monetize the first app (App #1) for a longer time period (until Break-Even Point is reached, and minimum target profit (tipping point is reached) before the new app (App #2) is launched
- Or: Introduce Freemium model and sell App #1 for FREE, and App #2 as the Premium version, offering existing App#1 users in-app upgrade to App #2 with off-sales to keep them happy
- Or: Only upgrade existing App #1, then tweak it into Free and Premium versions

3.7.8 Product-Life-Cycle Management (PLM)

Cross-Platform development & distribution strategies

Reduced development time & costs and maintenance costs are important factors to be able to compete on strategic cost levels and extend markets (Heitkötter et al. 2013). A key technical issue is scalability and cross-platform tools and especially MBaaS and PaaS are designed for high growth and scaling up for massive user adoptions.

Also for development of only a single native app will a cross-platform approach often give the most efficient method due to rapid & simplified development, API management, patching and new releases, agility, cost savings, speed of launch, maintainability and scalability.

Product-Life-cycle Management (PLM) is therefore more effective with a Cross-Platform approach and with less hurdles than for pure native coding for several platforms requires extreme effort.

Cross-platform strategies and tools are rapidly used by developers both to create multi-platform revenue streams and to speed up development timeframes resulting in shorter time to market. Another key aspect is to close the opportunity window for followers, so they can't monetize available platforms.

Early failing within Mobile ecosystems

Key strategically assessments and decision making on attributes such as; the "what" to launch, "where" to launch, "when" to launch and "why" to launch are the basic considerations (Dell'Era et al. 2013).

Identified reasons for early failing after launch are (ibid):

- Poorly strategically assessments of target market(s) including; marketing mix, product, price, promotion and distribution channels
- Inaccurate product development not catching customer value alignment (High innovation complexity)
- Poorly delivered usability
- Poorly understanding of quality levels and lack of design of competitive advantages
- Poorly assessment of forecast of sales numbers (i.e.: to reach Break-Even-Point and profitability)
- Inaccurate launches (Timing, coordination)

To be able extend Product-Life-Cycles the following characteristics/attributes are suggested (ibid):

- Creation of incremental product innovations are preferable rather than radical innovations due to reduced uncertainty, user adoption speed and user experience (UX)
- Continuously branding to create visibility and trust
- High brand awareness influences buyer's value perception and reduces pre-purchase uncertainty
- Strong innovation process with collaboration by early involvement of marketing departments for early start of marketing and branding (and build a community of brand ambassadors before launch)
- Targeting and focusing on incremental innovations to the masses (first and late majority) of adopters gives a higher potential success rate for diffusion speed
- Intensive Multi-Channel Marketing campaigns boost visibility, reach and brand awareness

3.7.9 Digital Marketing and digital branding for B2B/Business apps

There are many ways of marketing B2B/business apps, depending on if they are either native or web based apps. Native apps will be promoted with respectively Apple app store, Google Play, Amazon app store, or via HTML web based app stores. Web based apps can also be available from own brand websites via optimized download pages in addition to app stores specialization on Web (HTML) based apps.

Advantages with own download web page are both saving time to market, no approval process is necessary, and no fee of the revenue stream to third party. Social media marketing is the number one low cost marketing channel for all types of apps. The power of social media marketing is the fastest way of building online word-of-mouth and viral empowered branding. Hughes (2011 p. 230) points out the following important app marketing content:

1. Focus on your target market(s)
2. Evaluate your competitors innovation value & price value
3. Define a strong value proposition (and USPs)
4. Find the most cost-effective ad partner or ad network (if in-app ads are part of the revenue model)
5. Set app price and define promotions
6. Set realistic sales targets
7. Provide a roadmap for growth
8. Social Media Marketing & Digital PR & Digital branding
9. Coordinate your app launch(es)
10. Measure you progress

Raising the app price

Just like when selling almost any software products, it's very difficult to raise prices after launch for apps (Hughes 2011 p. 203). The reason is because the app users become used to a certain app value perception, and because of the nature of app stores and the transparency of Internet and websites. Discovery of competitors or similar products and their prices is easy to find out. Adding new app features will not help raising the app price because existing

customers or users will expect continued development of features and functionality, and current customers or users will get new upgrades and releases at no additional charge anyway (ibid).

Lowering the app price

It can be several reasons for an app owner to be forced to reduce the app price. When new entrants starts to compete with similar apps or covering the basic features (Fernandes and Martins 2011), it is smart to use a little time to determine whether lowering the app price is the best option or not. There are at least three tactics to consider (Hughes 2011):

- Create new (re-)innovative app features adding more benefits, empowering the app value – keeping the existing price tag
- Split the existing app into two apps (If not already Freemium model is chosen):
  - One free app version with the basic features covering the new entrants basics, destroying the value proposition for the new entrants
  - Re-branding of the existing app as a new Premium app – must have some new features and added benefits, either keep the old price or raising the price, now the Free version will help regarding diffusion and user-adoptions
- Keep the existing app as it is, lowering the price under the new entrant price tag. Successful marketing and branding will help building brand awareness and visibility before new entries try to take market shares, so this tactic works if the new Break-Even/sales forecast with lower margins lead to acceptable new cash-flow scenarios

The same price tactics apply both to native and web apps, and both for PPD and subscription based apps.

Building a standalone paid app

Business apps are choosing this approach more than B2C and i.e. game apps. For companies with a sound reputation and existing visibility, this approach can make sense. *"The reason for this is that often people are looking for an app to solve a particular problem. If they can find it for free, great. But if they can't, they are prepared to buy the app"* (Hughes 2011 p. 189). B2B/business and enterprise apps are not so price sensitive as B2C apps, because the issue the app solves saves either time or money or both, compared to how they are solving their tasks traditionally.

Typical B2B apps are within the categories Business apps and Productivity apps. Typical enterprise apps offer easier or smarter ways of either extending enterprises allowing mobile ways of interconnect and access existing or new enterprise software systems such as:

- Accounting software
- Enterprise resource planning (ERP)
- Sales force automation software
- CRM solutions
- Supply Chain Management
- Knowledge Management
- Workflow Management

Other enterprise and business apps pursuing to make game changer apps that transforming how businesses do business, collaborate, share knowledge or communicate.

Building a standalone free app

There are several good reasons to build a standalone free app. A free app can complement other paid apps or just be the first launch of several app products creating visibility and for branding purposes (Hughes 2011 p. 190). This approach can both be successfully for first-movers and especially follower strategies to disrupt existing paid apps in target markets (Arora 2014; Fernandes and Martins 2011; Hughes 2011).

Building market momentum and diffusion will help creating a user base, which can be monetized with in-app ads or later following paid premium app versions. *"This will allow people to download (or subscribe) your free app without risk and then purchase your paid app if they like what they see or want to obtain additional functionality"* (Hughes 2011 p. 190). This is also a smart way of reducing potential customer uncertainty. If the following premium app is part of the strategy from the beginning, either building the free version as inexpensive and downscaled as possible.

Another approach is to build one Premium app from the beginning, then downscale it as the free version. This way it is possible to save time and development costs. The common way of monetize a free app is with in-app ads. Since people tend to not been very keen about too much ads, it should be easy to optional pay for a version without ads without downloading a new version. What not to do is to change a free app to paid, most app sales will then decline regarding certain studies (ibid).

Building both a Free app + Paid app

When the B2B app innovation strategy is to create high innovation value and not only disrupt existing markets with a free app, building both a free app and one premium paid app simultaneously and launch them at the same time is optimal (Hughes 2011). This Freemium model creates a bait & hook mechanism (Osterwalder and Pigneur 2010), using the free app as bait for the paid (Hook) version. The common practice of Freemium revenue model is to only monetize on the paid version, delivering the free app without in-app ads. Of course it is possible to deliver the free app version with in-app ads and also give the users a low cost option with ad free opt-out version.

Building a paid app with ads

Building a paid app with ads is not very common. One scenario for monetizing the app with both app downloads or subscription revenue stream and in-app ad revenue is if the existing target app market has many similar apps and the price competitiveness of the market does it difficult to set the price similar or higher than existing apps. To disrupt the existing market lowering the app price, in-app revenue can help gaining a higher revenue sum and strengthen the cash-flows (Hughes 2011).

Cross-selling

Cross-selling can help boosting sales whether offering more than one app or with add-on packages to existing app. Cross-selling can be promoted in the app store, on own download web pages, or with in-app promotional push messaging. Anywhere that it is possible to promote complementary apps or add-on packages should be considered.

Cross-selling and up-selling is by far the easiest way of increasing sales to already established customers or users. *"The biggest factors in influencing the success of the cross-sell will be price and reputation. If your brand has established a good reputation, it will be easier to cross-sell a buyer on additional functionality or add-ons or another complementary app"* (Hughes 2011 p. 215). The marketing cost of converting an existing customer or user, is much lower than acquiring new ones.

Up-selling

Up-selling is possible with a Freemium business model or with a low priced app to a more added value package for the same app. *"The definition of up-selling is moving someone from a less expensive product to a more expensive one"* (Hughes 2011 p. 216).
The Freemium model is widely adopted, and the up-selling tactics can be the following (ibid):

- Prompt the paid version within a menu screen of the free app
- Invite users to upgrade at the bottom or top of your free app
- Tell users that they will no longer have ads if they buy the paid version
- Explain to users how many more features (and benefits) they will get with the paid version
- Prompt users periodically within the free app to give the paid version a try

Another way to promote up-selling is with push notifications. Including SDKs from app marketing companies will ease the setup, no coding necessary, and this will bring invaluable user behavior analytics.

"Do not assume that if you have a free app that your users will automatically move to the paid version. He or she must be invited to do so" (ibid). Whitepapers, user cases and promotional videos for add-on packs or complementary apps should also be accessible in-app from the mobile or tablet for the users' convenience.

Another way of up-selling is to create several ad-on packages, targeting different user needs or different business sizes. One example could be a CRM app, with 2 add-on packages: the sales consultants have the basic version, but in addition offering add-on packages with more in-depth sales statistics and reporting functionality for the sales manager and another add-on package with in-depth financial analytics for the financial manager.

Selling ROI

Selling B2B apps with business marketing forces strong focus on app benefits both for the company (customer) and end users. More than only communicate cost and time savings, focusing on return-of-investment regarding productivity and routines, increased smartness, new transforming way of doing business will empower the marketing message.

These examples should be clearly demonstrated from existing customers with easy accessible case studies placed via links, pictures or video at the frontpage of the app brands website. *"When reading such case stories, buyers will take comfort in knowing that they will make up their investment in your app with just a few uses. This approach to selling takes away the risk for the buyers to some degree"* (Hughes 2011 p. 173).

Time limited promotions & Boost campaigns

Reducing the price of paid apps for a limited time is common to boost downloads or subscriptions. For new apps this tactic should not be promoted to early after launch, because it will cut the correlated profit and change the cash-flow if not the target sales are reached. Therefore re-think both about the percentage of off-sales and the promotion time length.

Another time limited promotion could be to bundle apps if selling several complementary paid apps (Hughes 2011). Boost campaigns are another marketing tactic meaning attracting thousands of downloads in three days (To get higher app store ranking), via high-performing mobile ad networks and other mobile traffic sources, at the lowest possible cost, to bring CPI (Cost Per Install) down (ibid).

Marketing mix for promotions should be chosen with cost-effectiveness in mind.

Digital marketing are both measurable and accountable, with real time metrics and analytics, and offer smart ways of learning invaluable product diffusion, user adoption behavior.

And since many metrics like conversion rates, click-through rates and number of subscribers are available in real time, B2B marketers have the ability to track the progress of their campaigns, as well as continually optimize their actions to increase their success rate.

User adoption and B2B Social Media Marketing

Yet the core ideas of Roger's theory still apply, the evolvement of Social Media Marketing (SMM) has changed the possibilities for communication and engagement. The smart companies who commercialize their apps now can use social media marketing and online PR to communicate and market to all adoption categories simultaneously.

B2B marketers have the recent years started to learn tactics from the B2C marketers. They target tech savvy bloggers and tech journalists first (Innovators and early adopters) using social media channels where you find these people i.e.; twitter and Google+. Simultaneously from start of their social media marketing they also target early adopters and the early majority with social media channels with platforms such as; Pinterest, Facebook, LinkedIn, YouTube and with SEM (Search Engine Marketing) and ads.

Twitter and Pinterest are examples of social media platforms that are great for generating traffic to websites, blogs and app download pages. To create channels for further engagement and community building, platforms such as LinkedIn, Google+, Facebook or blogging are great.

This modern marketing approach is exemplified in figure 23. These platforms enable and help app creators to speed up digital branding, reach & visibility and app downloads and leads to more rapidly cross the chasm when they are able to communicate directly with several user adoption segments simultaneously, and can with analysis tools monitor the app acquisition process closely and take new action on the fly.
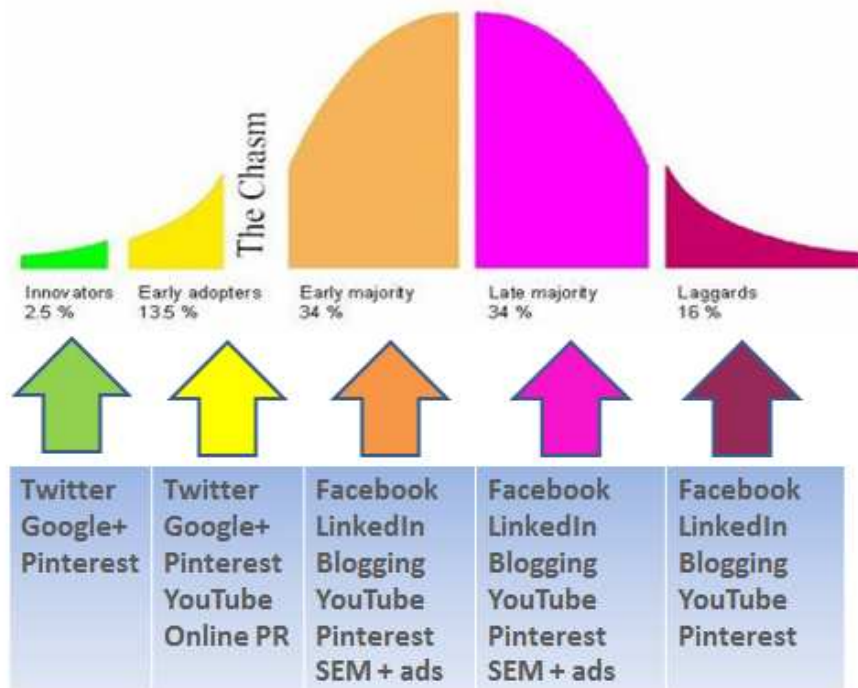
Figure 23. Example of user adoption curve and B2B Social Media Marketing.

In addition to use B2B social media marketing tactics, diffusion and user adoption gets help from Mobile app marketing services and in-app capabilities.

"While many apps segment their audience by user preferences, behavior and location, nearly a third don't take advantage of this data to send segmented messages or customize their app experiences. This is major missed opportunity." (Urban Airship 2014).

This feature in addition to in-app purchase, up-selling (I.e.: From free to premium) and cross-selling are smart ways of creation increased user adoption. Another key user adoption feature is in-app Push (Messaging) adoption. *"Among companies with apps, 70%-80% use push messaging across all industries except finance"* (ibid). Push adoption and push messaging are also features that help app companies build user/customer loyalty programs and to integrate this in their digital marketing strategy or Social CRM strategy.

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App marketing costs are increasing

The last years app marketing spending and costs are increasing as a result of the huge downloads the biggest apps achieve and the nature of competitiveness: *"According to TradeMode the largest app marketing platform in the world, an app must have 80,000 downloads in a 24 hour period to achieve visibility and be listed in the top 100 apps in the iTunes store. That equates to $96,000 dollars of marketing spend or an average cost of $1.20 per download – that is huge for most companies."* (Koetsier 2013).

The very few small and medium sized app companies or app owners (Or app start-ups) have deep enough pockets to spend so much on paid marketing. They are entirely dependent of low cost alternatives such as successful Social Media Marketing and online PR.

User Acquisition Cost

Also another crucial part of distribution and acquisition spending are increasing says Trademob (Neitz 2014): *"It is now more costly than ever for developers and app marketers to acquire new quality users for their apps. On average, it now costs developers $1.79 to acquire a quality user, defined as a user that will open the app at least three times. That's up 30% from November 2012, so it's imperative that app marketers are taking an intelligent and efficient approach to advertising"* (Neitz 2014) Fueling the rising cost of user acquisition is the deep pool of competition.

The simple reality is most apps will fail regarding promotion, marketing and user acquisition, lacking high growth and high quality users (adopters), and therefore failing to achieve profitability. This is mostly related to PPD models with distribution via app stores, and less the true picture for subscription based recurring revenue stream models. *"What will drive mobile app revenue are in-app purchases (IAP). As freemium apps continue to be more prevalent, Gartner forecasted that IAP will account for 48% of all app revenues, up from 17% in 2013 and just 11% in 2011. As it stands now, about 90% of paid apps are downloaded 500 times or less daily and make less than $1,250 per day"* (Ibid).

App survival within App Store: Ranking & Rating

Higher ranked apps on the chart have a much higher probability of survival (Jung et al. 2012). Closely monitoring of Ranking & Rating are crucial. *Strategic price* is identified as a critical success factor for app survival.

The research findings of Jung et al. (2012) indicate that the exit probability of free apps with lower ratings is larger than that of apps on the Grossing chart.
For paid Apps, the degree of reference on ranking and ratings is different; when app price increases, the hazard rate increases.

Other research findings is that early entrant competitive advantage is greater on the Free chart than that on the Grossing chart. Strategic price is identified as a critical success factor for Paid app survival.

But for Free apps, users have to evaluate the magnitude of the value without a price tag. As prospective users can't use the price tag of zero to infer quality, users tend to find another evaluation criteria's instead. Such quality evaluation criteria's are identified as; Prospective user quality preferences for Free apps, most people commonly looking at the total number of downloads of a certain app, referred to as the bandwagon effect (If it is good enough for many others, it probably suit me well….), additionally both high ranking and rating and positive user reviews plays a crucial role (ibid).

Early app reviews spur diffusion speed and user adoption growth

Early reviews are far more effective regarding diffusion *speed* and new user adoptions than reviews later in the app lifespan. Monitoring is urgently important (Hoon et al. 2013).

Short reviews with a high positive sentiment have the potential to appear in volume, increasing the challenge of information extraction for app strengths due to the lack of content to mine Success factors hence app review management are; daily monitoring of the used app store plus social media channels (With monitoring tools).

Managing early reviews and continuously re-innovate apps to increase existing and future user value alignment and balance user UI/UX expectations. Early and fast balancing of any negative reviews hence digital branding and Online Reputation Management (ORM). Review counts offer an indication of user engagement rates; how many reviews can an app expect? Free apps have more reviews compared to Paid apps.

This support the diffusion effect of Freemium models. But in some categories Paid apps get equal number of reviews as Free apps. When users pay for apps, indications point at a greater willingness and feeling of commitment towards providing feedback for others to follow. The longer app lifespan, the more likely it will not exhibit super-linear growth in reviews, suggesting the app losing competitive advantages or lose popularity or is disrupted (ibid).

3.8 Customer Value Management

Successful Customer Value Management (CVM) spur *customer-centric* & *customer driven* strategies (Verhoef and Lemon 2013). CVM integrate insights from social media communication, assembling all these data within enterprise solutions such as Social CRM solutions enhance insights about i.e. user and customer engagement, product behavior, retention rates, support issues, and insights, and help speeding up decision making by managers. Slow responses to address user support issues or subscription or product upgrades will push away users more rapidly than ever before (ibid).

Analysis of Customer Engagement Behaviors (CEBs)

Monitoring social media engagement, ratings and reviews increase the business intelligence with use of analytics tools.

App store distribution & Adoption rates VS. Costs

The app stores lowers technical entry and distribution costs for diverse mobile apps, but the marketing costs are rapidly growing. There is a high rate of turnover (churn) in app success within app stores (Bresnahan et al. 2013).

Rapid emergence of many demanders, together with low entry barriers created by the app stores, has led to a rapid and explosion of number of mobile apps. This lead to that all apps inside the same app stores are in competition with all other apps for users' attention, even not all apps have competitors.
Entrepreneur's struggles more than existing businesses launching their apps hence speed of diffusion and user adoption.

Matching new app launches with potential target mass of buyers appears to be very difficult for app entrepreneurs. Smart promoting of entrepreneurial apps must have a strong focus on ratings and comments which leads to visibility and building new app brands. Promoting new apps additionally outside the app stores are increasingly important; using both social media marketing and app promoting websites.

Disruptive apps from entrepreneurs are therefore disadvantaged VS. continuity strategies of existing firms with existing customers and online communities hence matching apps with new users and speed of diffusion and user adoptions.

New mobile apps are launched with high speed, and the problem of categorizing and search attributes (for i.e. competitor or IPR screening or monitoring) of apps is increasingly still a problem for entrepreneurs and new entries. The top lists serve best for the "block busters" and increase their success for user adoption growth, but creates barriers for others to hit their "spot in the shopping window". A growing ad industry offers entrepreneurs a way of pay them to visibility via in-app ads from other successful earlier launched apps via ad-exchange networks (ibid).

3.8.1 Introduction of a Value-centric Innovation Strategy model

Value-centric focus

The consensus established through the literature review provided a consistent *Value-centric innovation* focus, recommendations and direction for creating modern innovation strategies adaptable for B2B/Business mobile and tablet apps;

the explored literature provided the foundation of a *proposed* model of 7 stepss that facilitate designing a proposed sound *Value-centric Innovation Strategy* adaptable for B2B/Business apps addressing successful managerial strategic thinking and tactics such as; *proactive* orientation, *opportunity*-driven, *Value focused* and *driven* and strong customer intensity (Giglierano et al. 2011), strategically thinking and *customer-focused & customer driven* (Value-driven) business models (Zott et al. 2011), *customer centric* businesses based on *emotional Values* (Nordström and Ridderstråle 2002), *user centric* innovation, *user-added* value & *cooperative value* generation, *speed* of decision making and *speed* of coordinated launches (Bharadwaj et al. 2013), *interaction configuration* (and feasibility), *customer response capacity* and *cooperative value* generation (Wirtz et al. 2010), *differentiation* built with *transient advantages* (McGrath 2013), *differentiation* created with *Value-centric innovation* (Dell'Era et al. 2013; Fernandes and Martins 2011; Kim and Mauborgne 1999), creation of a new *value curve* (Blue Ocean Strategy) making competitors increasingly irrelevant (Kim and Mauborgne 2005a; 2005b), extensive Social Media Marketing and digital branding (Bresnahan et al. 2013; Edwards and Day 2005; Hughes 2011; Wirtz et al. 2010), Customer Value Management (CVM) including *Engagement Behaviors* (Verhoef and Lemon 2013), and systematically *Strategy-to-Execution* (McGrath 2013) and *speed* of execution (Bharadwaj et al. 2013; McGrath 2013; Nordström and Ridderstråle 2002).

Speed is *paramount* for digital businesses (Bharadwaj et al. 2013; McGrath 2013; Wirtz et al. 2010); *hyper-speed* determine the dynamics and characteristics within the app world and especially within the top 3 app stores (App Store, Google Play, Microsoft Phone Store and Amazon Appstore).

The proposed model extract <u>existing</u> identified *Value-centric* attributes and characteristics across the literature review. The consensus appear for especially; *speed of strategic thinking and execution, to value innovate with a leap in value, user* and *customer-centric* approaches and extensive Social Media Marketing with Digital Lead Funnel Management focusing on conversion rates, profit margins and excellent digital branding. These attributes creates the cornerstones of the proposed 7 stepss *Value-centric* Innovation (VCI) Strategy Model.

The proposed model is shaped based on *insightful* but fragmented and eclectic theories and frameworks, hence the research context and purpose and diversified grounded theory and disciplines (Zott et al. 2011; Osterwalder and Pigneur 2010), to excel *Value-centric* innovation strategically thinking for managerial and operational application, already individually proven to be highly actionable for managerial practitioners with an entrepreneurial approach.

The model excel *hyper-speed* of strategic thinking and execution combining core elements and adoption of (1) Value innovating (Value Innovation + Value Based Innovation + POC-Proof-of-Concept), (2) shaping a new *Value curve* with Blue Ocean Strategy, (3) *Value-oriented* Transient advantages, (4) high Value *differentiation* with unique value propositions extensively promoted with Social Media Marketing and digital branding, (5) *Value-driven* business model & *Value-centric* strategically thinking, (6) disruptiveness of *Value creation* & *Value capturing* models, (7) and *Customer Value Management* (CVM) with extensive focus on *Customer Engagement Behaviors* (CEBs) with a setup of objectives, KPIs, measurements, and analytics tools to monitor key strategically business, customer experience and app parameters.

The proposed model is not a radically new way of thinking; extracting eclectic insights anchored within proven theories and frameworks based from the included literature review. The proposed model is more a modular strategy process innovation, bringing the best features from business strategy and innovation strategy together for maximizing strategy-to-execution.

The objective with the model is to create a model for both further academic explorative research, and that it is tailored for innovation strategy and innovation management processes, additionally pursuing an actionable and operational (Strategy-To-Execution) design for managerial adoption.

The idea is also that the model is not limited to support app product strategists only, but for all digital businesses and digital start-ups that strive to find their product innovation strategic direction or position, in their pursuit for delivering unique innovation value. The model is cyclic (Figure 24) and dynamic hence emphasizing the external environments and utilize value-centric activities.
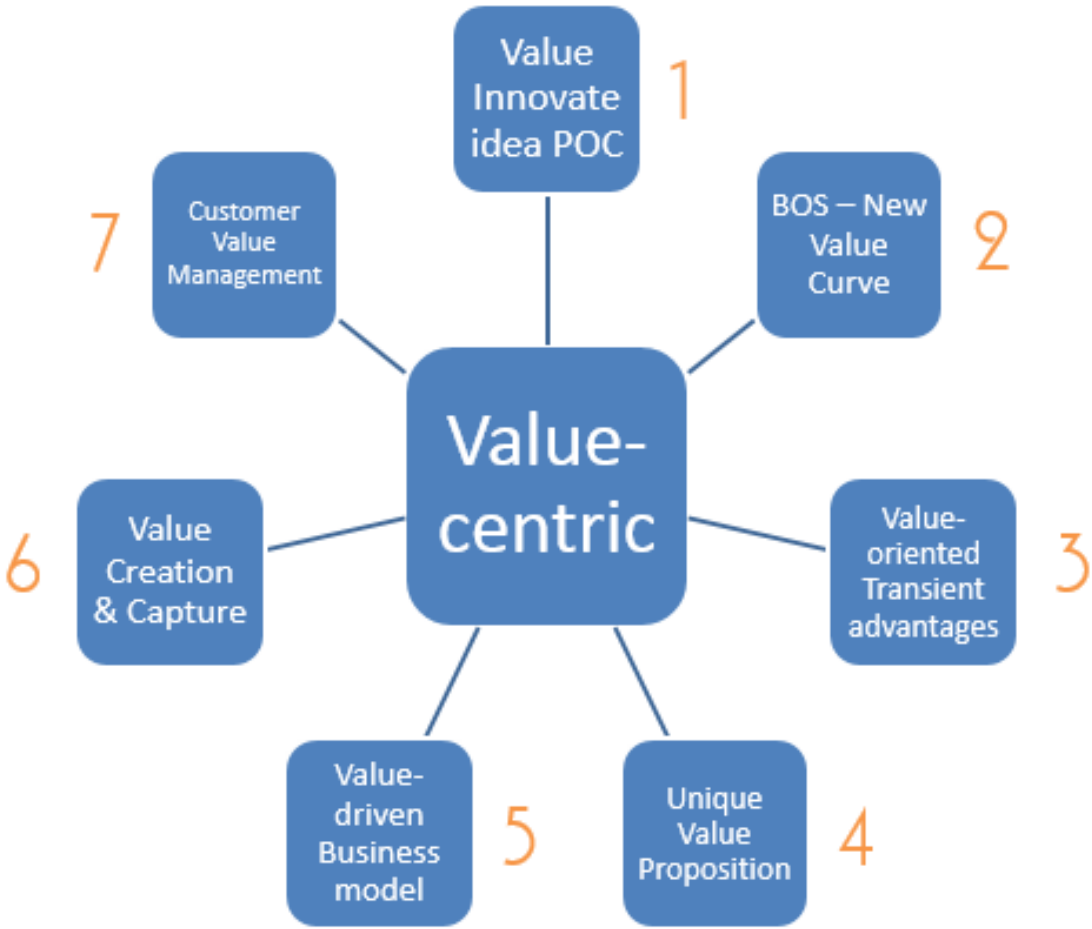
Figure 24. The 7 stepss of the Value-centric Innovation Strategy model.

Value innovating (Step 1)

"*Vision without action is a daydream. Action without vision is a nightmare.*" (Japanese proverb)

1. Identify and define the app *Vision*, *purpose* and what *challenge* it solves
2. Screen the app stores, the web and social media for existing synonymy apps
3. If none incumbents or competitors are found, calculate roughly: Break/Even, Profit & Loss, ROI
4. Perform initial Value-centric innovation assessments
5. Pitch the idea to external app industry *critical experts* (Remember signed-off NDAs)
6. Verify if the app idea seem opportunistic hence profit potential and user adoption speed
7. Rapidly create a simplified prototype or mockup, evaluate POC by *critical experts*
8. Create a road map with a portfolio of transient advantages
9. The road map shapes the app specifications, scope and budget
10. Get external test pilots onboard early, and create a feedback loop (User-added Value)

The Value Based Innovation strategically process should lead to the new market space or innovation "Hot spot" (BOS: Value curve) when done optimally should possess several competitive advantages.

BOS – creation of a new value curve (Step 2)

1. Perform a BOS assessment – adapted to the nature of the app idea
2. Calculate target cost
3. Calculate strategic Price tactics
4. Perform a 4 Action framework assessment

BOS 4 Actions Framework exemplified

Demonstrating Blue Ocean Strategy into a fictive app project and using the 4 Actions Framework to identify areas for changes and optimization resulting in a new value curve (Innovation Hot spot) to empower competitive advantages, exemplified in figure 25:
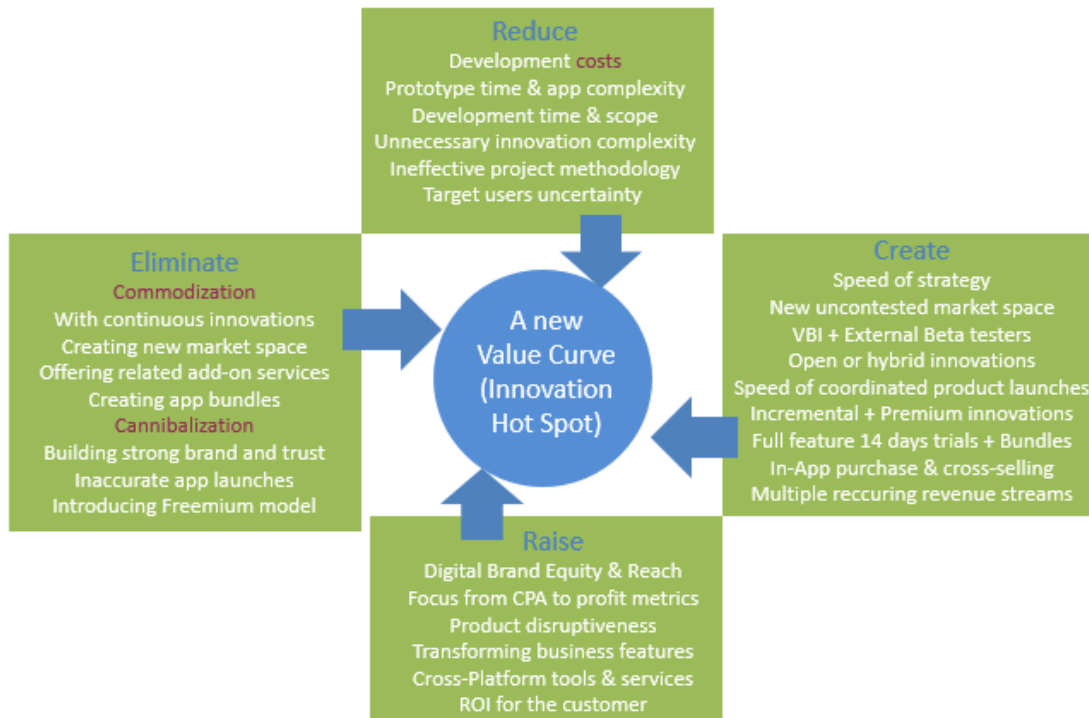
Figure 25. BOS 4 Actions Framework - adapted for B2B app Value-centric Innovation strategy.

Shaping Value-oriented Transient advantages (Step 3)

Customer-centric and value oriented powered transient advantages by continuously engagement with existing and future user and customers (Noncustomers).

1. Proactive-orientation (Always searching new problems or challenges including unarticulated)
2. Opportunity-driven (Always adopting new value-added opportunities that are financial valid)
3. Transient advantages are spotted both via Push or Pull (From social media community)
4. Innovation Management is highly anchored within top level management
5. A feedback loop is designed between external users and PLM and tech lead
6. Customer Value Management is used to explore and analyze customers' *future* needs

Unique Value Propositions (Step 4)

Yes, they need to be *really* unique among the app masses, and the previous steps within Value-centric innovation strategically thinking should identify and provide really unique value propositions, not slogans without substance. The defined value propositions are shaping the copy writing of USPs, branding and product message across corporate websites and social media and fueling the engagement behavior, interaction *configuration* and customer *response capacity* (Edwards and Day 2005; Hughes 2011; Wirtz et al. 2010).

Shaping Value-driven business model (Step 5)

Starting the process with evaluating the app idea, its financial potential and viability, the break-even point and units, defining value-centric attributes, shape the directions and construction of the value-driven business model and revenue capture models.

The characteristics and assessments of step 5 are defined as:

- Value-centric focused and driven
- Extensive customer-driven intensity
- Extensive focus on hybrid (Open) innovation and user-added value
- Extensive interaction configuration and customer response capacity
- Business Model Generation Canvas

Business Model Generation Canvas

The Value-centric Innovation Strategy model embed the Business Model Generation Canvas, adopted for app start-ups or entrepreneurs, or for reshaping existing business model or market direction or position of the incumbent (Osterwalder & Pigneur 2011).

The model is presented here with a generic content exemplified with the theories and best practices based in the literature review. The model is an intuitive way to identify needed core features of a business model including an activity based approach, customer (market) segmentation, and marketing (channels) i.e. Social Media Marketing.

How to value innovate or identify a unique value curve is explored in block 2 and 3 in the value-centric innovation strategy model. The canvas is exemplified with generic information, yet adopting insights from the research literature review and theory chapter, figure 26:

Figure 26. Source: https://bmfiddle.com/
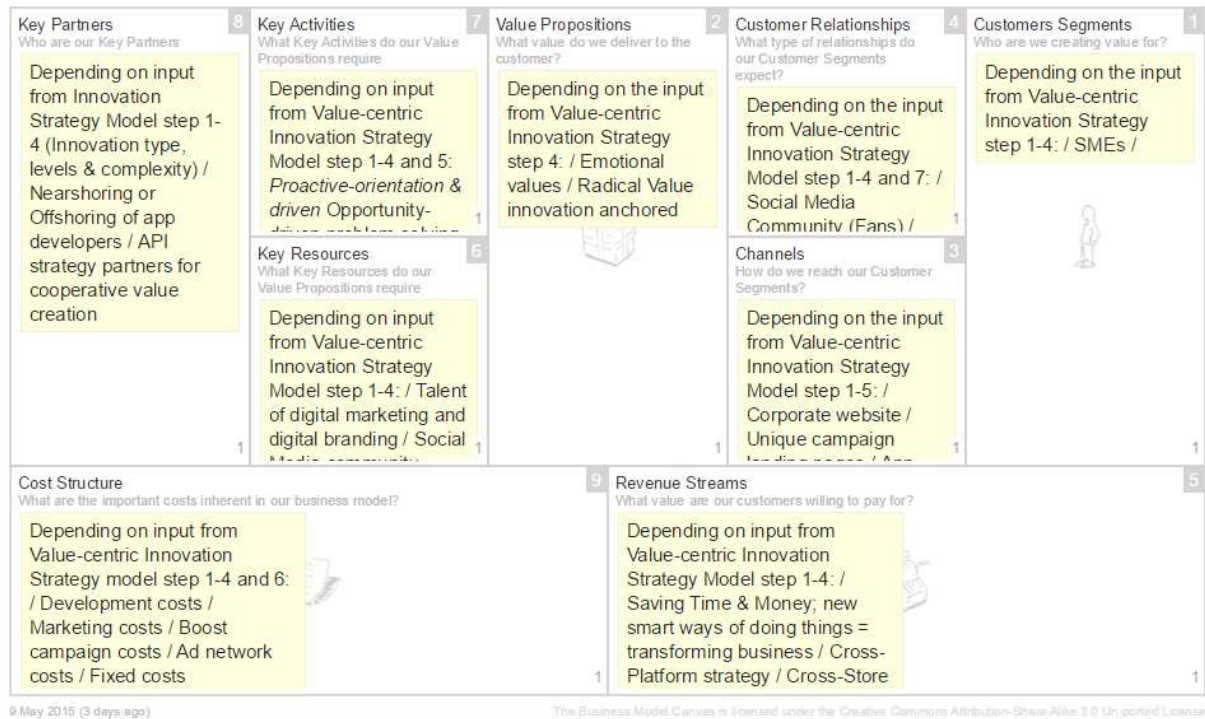
SWOT analysis

To be able to identify and then focus on optimal competitive advantages, performing SWOT (**S**trengths – **W**eaknesses – **O**pportunities – **T**hreats) analysis both for the product, the market and the business and revenue capture model are essential (Osterwalder & Pigneur 2010). These easy to use tools will help both optimizing the app innovation strategy and help identify and define both the value proposition and USPs (Unique Selling Propositions) for the planned B2B app (Hughes 2011; Osterwalder & Pigneur 2010):

- App product SWOT analysis
- Target market or niche SWOT analysis
- Business model SWOT analysis and
- Revenue stream SWOT analysis

Shaping Value creation & Value capture models (Step 6)

Within app stores:

- Free with In-App ad monetization - IAP for removing ads
- Freemium (Faster speed of user adoptions)
- PPD model - Native & Hybrid apps
- Subscription model - Native & Hybrid apps (Increased protection against disruptors)
- Bundles – Native & Hybrid apps (Increased protection against disruptors)

Outside the app stores:

- Subscription model via corporate websites and campaign landing pages – Web apps
- Subscription model via corporate websites and App stores – Hybrid apps

The Value-centric model promote that a digital presence must be built already from verified Proof-Of-Concept and funding. Starting marketing and promoting after launch, is too late, especially for single-app and with a single-store approach with a PPD revenue model; hence the median half-life of business apps of 6 months where the user adoptions often decline fast, building a social media community of early adopters (Beta testers) are crucial.

The newest development of value capture model from Google is that A/B split testing feature (Multivariate testing) will be deployed inside Google Play. This mean that app publishers can test out which price model that get the most user adoptions. Using A/B, new ideas can be essentially focus-group tested in real time: Without being told, a fraction of users are diverted to a slightly different version of a given web page and their behavior compared against the mass of users on the standard site. If the new version proves superior—gaining more clicks, longer visits, more downloads or subscriptions, it will displace the original; if the new version is inferior, it's quietly phased out without most users ever seeing it.

This new to come functionality will also provide A/B split testing of the app promotional page, testing out different layouts, videos, value propositions and USPs, helping optimizing the app marketing and ASO tactics.

The trick is to use marketing and communication tactics creating passionate Fans out of passive (Likes) members. That way Fans became brand and product advocates and the app

owner can exploit Word-of-Mouth marketing. Digital Lead Funnel Management is obligatory for success.

Digital Lead Funnel Management

Digital businesses must excel digital marketing trough creating digital awareness, visibility and reach and focus on conversion and retention rates and measurements. For app business owners this mean to focus on; building corporate websites and digital communication and marketing campaigns across channels. Cross-channel marketing and communication across; website including SEO and SEM, unique product landing pages, e-mail, social media platforms that fit the target users or customers.

To be able to successfully harvest sales leads across multiple channels and platforms, app businesses have to design an optimized Digital Lead Funnel for increased conversion rates. Core attributes for successful Digital Lead Funnel Management are listed below:

- Focus and execution of AIDAS (**A**ttention, **I**nterest, **D**esire, **A**ction & **S**atisfaction)
- Clearly defined Call-To-Action parameters
- Quality content across channels and platforms
- Clearly defined objectives and KPIs for measuring traffic and conversion rates
- Conversion Rate Optimization (CRO)

An example of Digital Lead Funnel processes are presented in figure 27:
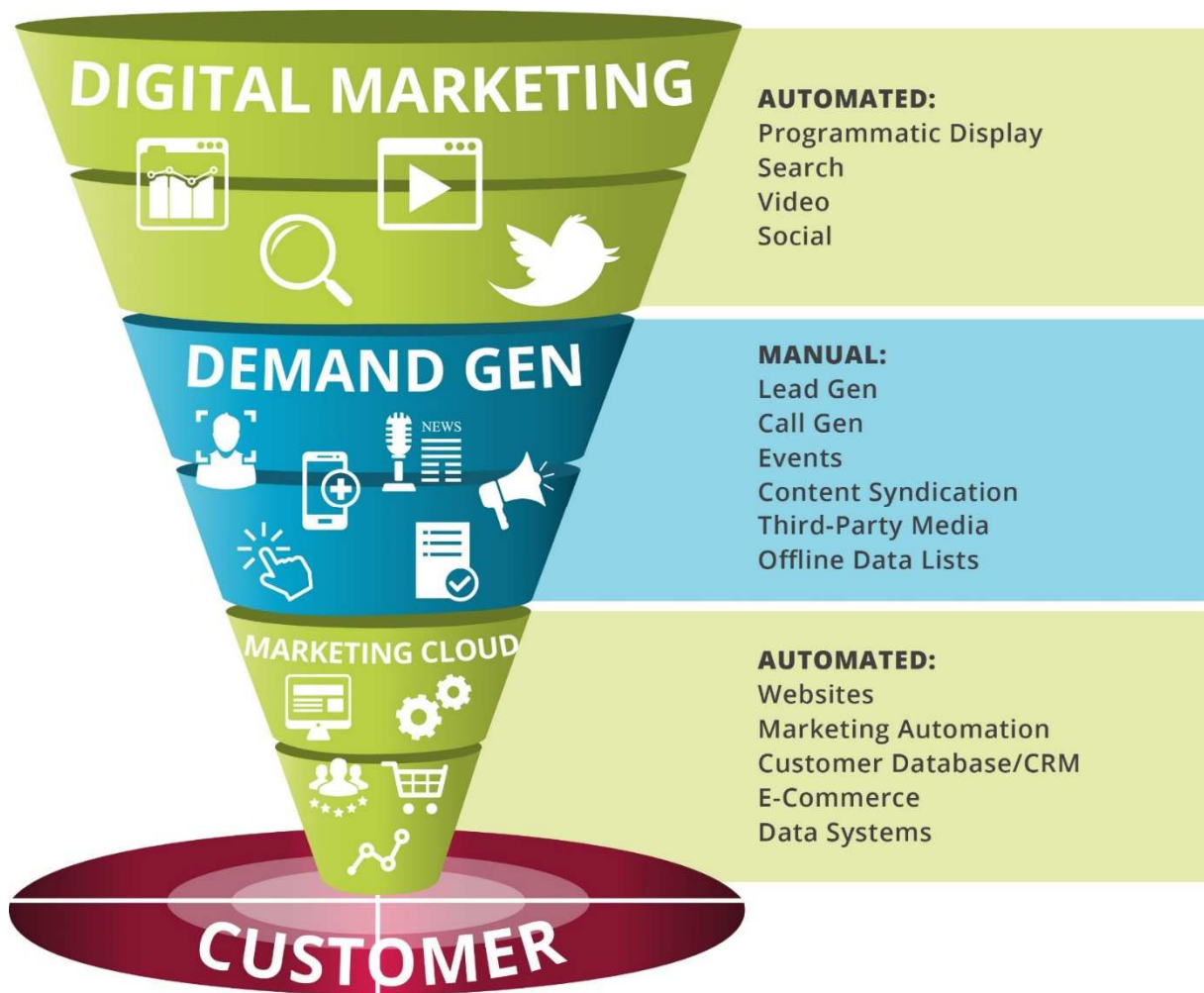
Figure 27. Digital Lead Funnel for optimized conversion rates and engagement orientation

Customer Value Management (Step 7)

The keys to successfully integration of CVM is tools and execution.

Creation of an external feedback-loop with existing customers and users to monitor, assess and take action on tips and hints from the app community is invaluable.

Identifying both business, customer and app related measurements to monitor growth and retention, with profit related KPIs to take action and create smart marketing tactics to boost adoption and to create fans out low quality adopters.

The 7 stepss Value-centric Innovation Strategy Model exemplified

The example below (Figure 28), visualize the 7 suggested steps for a typical innovation app idea (Regardless of radical or incremental technological innovation type); (Step 1) taking the innovative late entry (Follower) approach, Value innovating the app features creating a leap in value (Radical Value Innovation) elevating *target cost* and *strategic price*. (Step 2) conducting BOS assessments, including validation of step 1 output resulting in a new *Value curve* (New Innovation Hot spot, uncontested market position). (Step 3) continuously conducting and explore *proactive-oriented*, *opportunity-driven*, *user-centric* & *user-value* driven and external *feedback-loop driven activities*, creating a portfolio of *value-oriented* transient advantages to be able to stay-ahead and *keep* the new value curve/market position (Blue Ocean). The result of strategically thinking through step 1-3 shapes the foundation of identifying and defining *really* unique value propositions (Step 4) including USPs. The insights provided through step 1-4 (Value-centric Innovation strategy way of thinking), are shaping and conducting *how* the business model should look like and *what* attributes it should consist of (Step 5), not the other way around!

Value-centric assessments are fueling the strategic direction and content for a new value-driven business model using Business Model Generation Canvas (Osterwalder & Pigneur 2010) as preferable tool (Business strategy way of thinking).

The result of a *Value-driven* business model generation canvas (Fueled by value-centric innovation ideas and assessments) exercise should then identify and excel (Step 6) the most desirable and lucrative *Value creation* & *Value capture* model approaches. The last step (7) in the cyclic process is Customer Value Management, ensuring that monitoring the customer experience, Customer Behavior and customer value and price value alignment are strategically anchored and actionable.
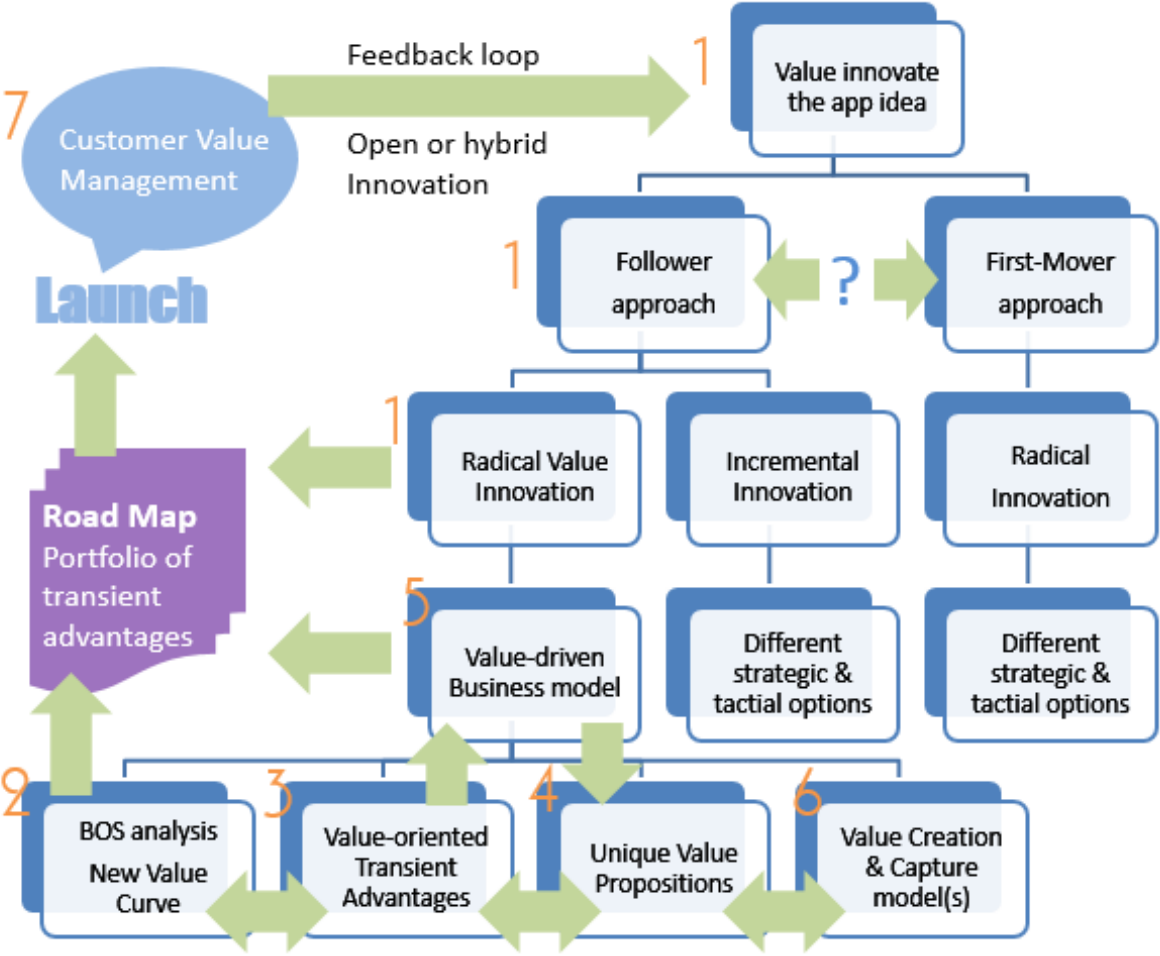
Figure 28. Cyclic 7 stepss Value-centric Innovation Strategy Model.

Value-centric based Product-Life-Cycle Management (Figure 29)
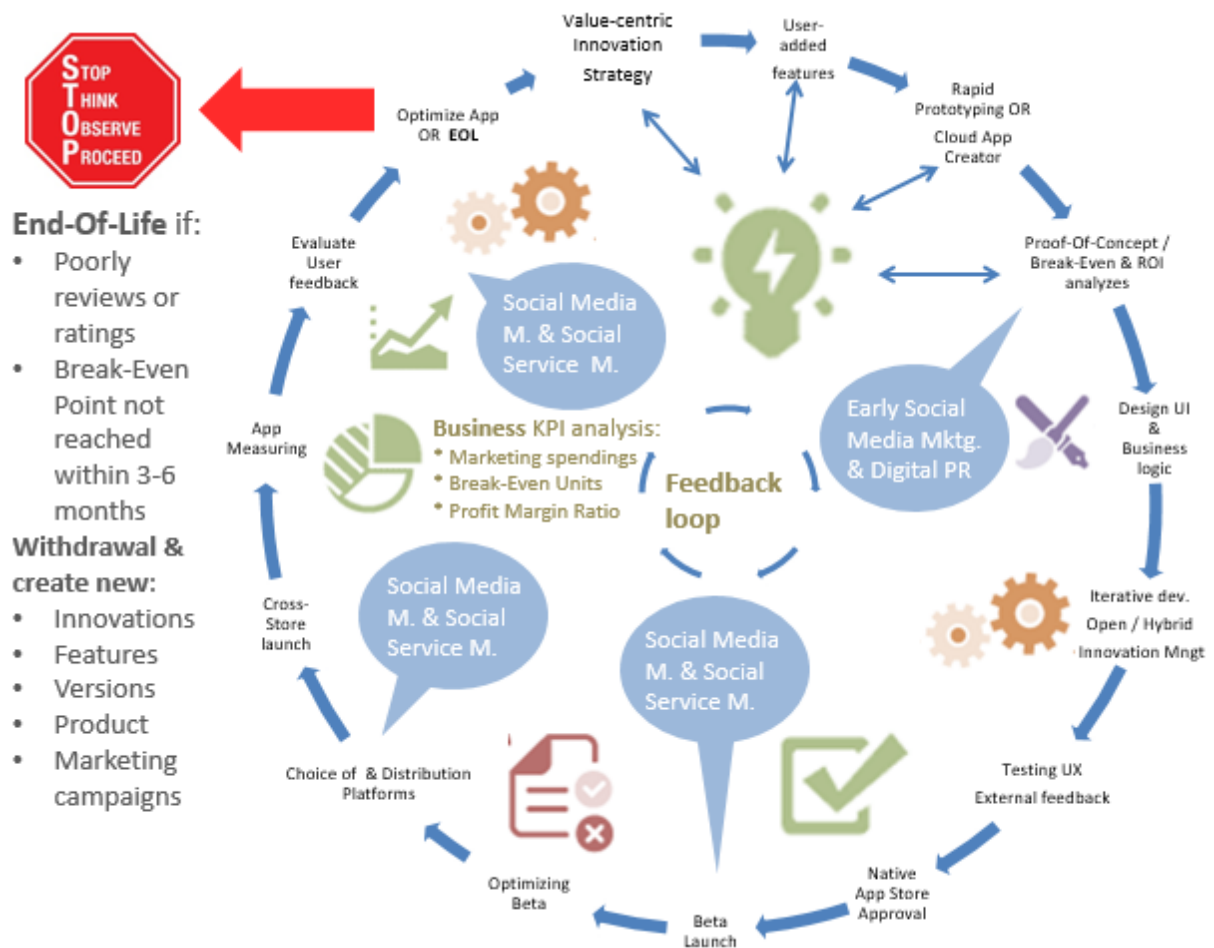
Figure 29. Value-centric based Product-Life-Cycle for B2B/Business apps.

Action planning

The roadmap with a portfolio of transient advantages shapes the foundation for user-centric app feature and release planning. Capture ideas from a cyclic feedback loop of customers and potential byers, and others via hybrid innovation via a customized and personalized user community portal. Using modern software innovation tools excel i.e. usage of voting that makes it easy to know what people needs (User-driven, user-centric development) reducing the hurdles of prioritizing high value features.

4. Survey data results

In this section, looking into the collected survey data is split between the quantitative and qualitative data. Firstly, analyzing the results from the quantitative data (Appendix C1), with key findings highlighted. Secondly, analyzing selected variables from the quantitative data for crossed data queries (Appendix C2) and correlation analysis related to the research objectives with key findings highlighted. Thirdly, the qualitative data results (Appendix C3) will be analyzed, with key findings highlighted. Then will the key findings from both quantitative and qualitative data results will be mixed. At last all the data will be aggregated and overall themes and findings gets an overall interpretation, utilizing a qualitative focus and interpretation technique.

Before the overall interpretation, both the quality of validity and reliability are evaluated in the context of mixed methods approach (Creswell 2013).

4.1 Analyzing quantitative data results (Appendix C1)

The respondents work responsibilities varies between app programming & development (44%), app marketing (11%), and app innovation & R&D (11%). None have app product strategy as core work responsibility (Table C1-Q3).

The respective companies deliver the most common mobile app platforms (Android, iOS, Microsoft), with cross-platform apps ahead (44%). Programming code languages in use reflects the app platforms the companies' target, with HTML5 in front (100%), followed by Objective C/XCode (89%), Javascript (89%), .NET (67%) and Node.js (67%), (Multiple choice optional question - Table C1-Q5).

Cross-Platform tools/frameworks are widely adopted by the companies, 89% use such tools today (Table C1-Q6). When it comes to another modern way of creation apps, none of the companies use cloud based app creator services today (Table C1-Q7). Last 3 years the companies have developed apps for SmartPhones (67%) followed by apps for tablets (33%), (Table C1-Q8). The respective team's project methodologies reflect the following regarding early development phase considerations; firstly, the majority (56%) always defines the B2B app vision prior to starting development, while 33% don't (Table C1-Q9).

Secondly, far more (89%) always define the app <u>purpose</u> prior to starting development (Table C1-Q10). Thirdly, even more importantly, 78% define the app <u>value</u> prior to starting development (Table C1-Q11). When creating new apps, and when SWOT analysis are conducted, business model SWOT (44%) are pointed out as the most important, followed by market SWOT analysis (33%) and product SWOT analysis (22%), (Table C1-Q12).

When it comes to defining <u>success criteria's</u> prior to starting app development, 78% are not doing it, only 22% does it (Table C1-Q13). 44% points out that user or business needs, problem or challenges, always are worked out in collaboration with customers or user community. Another 44% choose to use different approach from project to project. 11% think that this task should be the customers' responsibility (Table C1-Q14).

The majority (67%) of the companies assess the Proof-Of-Concept after prototyping, while a few (22%) don't know when or if this task is performed (Table C1-Q15). 89% of the respondents agree to that starting with an app innovation strategy first enhances the entire innovation process (Table C1-Q16).

22% thinks complex innovative app features extend Product-Life- Cycle, 11% thinks this shorten it, while 67% don't know (Table C1-Q17). When it comes to creating competitive advantages, only 22% think the level or amount of complex innovative app features leads to competitive advantage, 33% says no, and 44% don't know (Table C1-Q21).

When it comes to different (launched) app types and business processes their respectively apps solve, the following mix are delivered; workflow (67%), communication (56%), marketing (56%), productivity (44%), knowledge (44%), collaborative (44%) and sales (33%), (Table C1-Q23).

Most of the developed apps extend (67%) businesses, while only 22% of the apps are designed to help businesses transform (Table C1-Q24), meaning deploying totally new and innovative ways of how they are doing business.

The choice of app revenue model among the respondents is Freemium model (22%), subscription models (22%), followed by other <u>not specified models</u> (56%), (Table C1-Q27).

More interesting regarding measuring the real app innovation value and market response, is ultimately resulting in the total numbers of downloads or subscriptions of their most successful apps.

44% have reached between 1 to 1000, and 22% have reached between 1001 to 5000 units, while 22% have reached between 30001 to 60000 units (Table C1-Q32).

Another success criteria is to get many (positive) user reviews, supporting the evaluation of perceived value, and this also contributes to empower visibility, social media marketing and digital branding.

The most successful apps delivered from the companies have only 1 to 20 reviews (67%), 51 to 100 (22%), and 21 to 50 (11%), (Table C1-Q33). The ultimate success criteria regarding user adoptions (Not i.e. profit) for native apps, are of course if any of the business apps from the participant companies have hit any App store top lists!

Only one company has hit the Top 10 list. Neither the Top 20, Top 100 or Top 200 list are hit by the other companies (Table C1-Q34).

66 % of the respondents think social media marketing and digital branding are important for successful app user adoption, while 22% think this is not important (Table C1-Q35).

22% of the company's focus more on marketing app benefits rather than app features, while 22% picked neutral and 33% don't know (Table C1-Q36).

Several of the app development companies develop in-house enterprise solutions. 33% of the companies' strategies pursue to create in-house solutions, while 22% target existing mass markets and 22% target niche markets (Table C1-Q37).

The type of disruptive forces their respective apps apply are distributed between; technology disruption (22%), creative disruption (22%), business model disruption (22%), market disruption (11%), and 22% don't know, (Table C1-Q38).

The app Product-Life-Cycle differs among the companies. How long time in average does they manage app versions before upgrading with new re-innovations to keep competitive advantages? Their average Product-Life-Cycles before upgrading are; <6 months (44%), <8

months (22%), <10 months (22%) and <2 months (11%), (Table C1-Q39). Monetizing multi-sided markets are lagging with only 11% agreeing (Table C1-Q40).

The app price strategies among the companies vary between; medium price (33%), low price (22%) for incremental app innovations, followed by unknown price strategies (22%). None choose to go out with high prices (Table C1-Q41). Only 33% agree to that low price strategies is the way to go to build B2B market momentum quickly (Table C1-Q42).

Neither the strategically choice choosing high price from launch to increase profit before entrants or competitors disrupt the market (or punctuated equilibrium occurs) seems adopted among the companies; while 56 % disagree to this strategically option and 33% don't know (Table C1-Q43).

When entrants or competitors launch similar apps with lower or similar price, only 22% are adding more features to enhance the product value rather than reducing the price (Table C1-Q44). The type of disruption met from new entrants or existing competitors are as followed; technology disruption (11%) and market disruption (11%). 78% don't know if they are meeting any type of disruption (Table C1-Q46).

The 4 areas pointed out with the highest risks within B2B app development are (Multiple choice option); budgets (78%), time scope (67%), innovation process (33%) and lack of available resources (33%), (Table C1-Q47).

55% of the companies do not always perform Freedom-To-Operate (FTO) analysis to avoid infringement related to new app product launches, while 33% don't know (Table C1-Q48).

44% calculate break-even and/or ROI after defining purpose, vision and value and therefor before prototyping and app development starts (Table C1-Q49). Prioritized by the respondents, the most important economical calculations to analyze before starting app development is; ROI (44%), Gross Margin (22%) and payback (11%), (Table C1-Q50). None points out Break-Even sales or units or cash-flow/Profit & Loss.

56% have experienced increased spending per app (User Acquisition Cost) for the last 3 years, only 11% have experienced decreased spending's, while 33% don't know this data (Table C1-Q53). When it comes to profit per app 56% have experienced increased profit, 11% have experienced decreased profit, while 33% don't know this data (Table C1-Q54).

The respondents points out that incremental app innovations (67%) gives the best profit, while 33% don't know these kind of business and innovation intelligence (Table C1-Q55).

Only 33% agree to that building an app for multi-sided platforms increases number of user adoptions and profit, while 56% don't know enough about this product strategy (Table C1-Q56).

The last question addresses what position is responsible for Innovation Management within the respective companies. 67% of the companies distribute the focus on innovation to all team members, while 22% have dedicated persons in the role of Innovation Manager, while 11% point out the Marketing Manager as responsible for Innovation Management (Table C1-Q57).

4.2 Crossed Quantitative Data Queries – Analyzing results (Appendix C2)

A selection of quantitative data variables are examined with crossed data queries for some direct cause and effect correlation analyzes related to the research objectives. To examine possible (causes and effects related to) correlations between the tasks related to create unique value creation, the following crossed data queries are performed related to research objective 1;

vision (Q9), purpose (Q10), value (Q11) and success criteria's (Q13) are crossed with the total numbers of downloads or subscriptions for the most successful app (Q32), corr((Q9, Q10, Q11, Q13)Q32). The ultimate response if real value creation and innovation value is created, is of course to measure the numbers of downloads or subscriptions in total, reflecting the market response.

Accumulated for these strategically tasks, the total number of downloads/subscriptions are by far higher for the companies that always define; vision (56%), purpose (89%) and value (78%) prior to starting development, than they who don't (Tables: C2-Q9-32, C2-Q10-32 , C2-Q11-32).

78% does not define success criteria's prior to starting development. Surprisingly are the accumulated numbers of downloads/subscriptions higher for these companies, and therefor indirectly in contradiction (reliability conflict or spurious correlation?) to the past result for analyzing correlation for vision, purpose and value (Table C2-Q13-32).

Another way of analyzing if a high degree of innovation value is created is to analyze the number of user reviews, and how the usage of prototype first approach versus innovation strategy first approach affects the Proof-Of-Concept verification.

To analyze causes and effects related to research objective 2 the following crossed queries are performed: Value (Q11) crossed with numbers of user reviews (Q33), corr(Q11, Q33): 78% of the companies who always define the app value prior to starting development, have more accumulated user reviews than they who don't (Table C2-Q11-33).

Prototype or mockup first approach (Q16) crossed with Proof-Of-Concept (Q15), corr(Q16, Q15): 67% of the companies that utilize prototyping first approach assess the Proof-Of-Concept after prototyping (Table C2-Q16-15).

Innovation strategy first approach (Q17) crossed with Proof-Of-Concept (Q15), corr(Q17, Q15): 89% of the companies that utilize a strategy first approach also assess the Proof-Of-Concept after prototyping (Table C2-Q17-15).

To analyze causes and effects related to research objective 3 several crossed queries are performed. App market strategy (Q37) crossed with average Product-Life-Cycle scope & competitive advantage (Q39), corr(Q37, Q39).

Only one company (11%) pursuing to strategically create new markets (To avoid head-to-head competition) manage their average Product-Life-Cycle scope up to 6 months before upgrading with new re-innovations to keep their competitive advantage.

22% target existing mass markets (More competition, but mature markets) and manage their average Product-Life-Cycle span between 2 and 6 months. 22% target niche markets (less competition) and are able to manage their Product-Life-Cycle longer (8 months), before upgrading. 33% of the companies delivers in-house enterprise apps and their average Product-Life-Cycle before upgrading with new re-innovations are between 6 to 10 months (Table C2-Q37-39).

How do different disruptive app forces affect Product-Life-Cycles? (Q37). Q37 are crossed with Q39, corr(Q37, Q39). The responses regarding creating technology disruption are spread between short (2 months) and long (10 months) Product-Life-Cycles.

Market disruption with 6 months Product-Life-Cycle, creative disruption with 8 months Product-Life-Cycle, and business model disruption with 6 months Product-Life-Cycle (Table C2-Q37-39).

To analyze causes and effects related to <u>research objective 4</u> the following crossed queries are performed. Choice of revenue model (Q27) crossed with profit (Q54), corr(Q27, Q54):

One company has increased their profit per app with Freemium model for the last years. Another company has also increased their profit, but with 1 month subscription model.

Another 3 companies have increased their profit with not specified models (not chosen any pre-options in the survey). One company has <u>decreased</u> their profit the last 3 years with a 12 months subscription plan (Table C2-Q27-54).

None of the companies uses Pay-Per-Download (PPD), Free with In-App ads or In-App purchase models.

Innovation type & profit (Q55) crossed with increased or decreased profit (Q54), corr(Q55, Q54). The most adopted innovation type among the companies, are <u>incremental innovations</u> with 4 companies increased their profit, 1 company decreased their profit. <u>None</u> of the companies picks radical innovations hence profit considerations (Table C2-Q55-54).

4.3 Key quantitative findings – interpretations
In this section, the key quantitative research data findings will be interpreted. The key findings to be presented here are all related to the 4 research objectives within value based innovation and its effect on; value creation, user adoptions, disruptive innovation and profit.

The participant companies deliver cross-platform apps as their most used platform of choice, with HTML5 coding in front. The majority of the companies use cross-platform development tools and frameworks, but <u>none</u> of them have embraced and started to use cloud based app creator services (I.e. cloud services: SaaS, MSaaS, BaaS) today. That finding points out a missed opportunity to be able to offer complementary development paths, with especially faster development scope and the possibility to increase profit margins as two very good reasons.

The quantitative research data results offers evidence that companies that defines the app; vision, purpose and value increases the numbers of downloads or subscriptions and then outperform the companies that don't! This finding support "best practice" approaches for software/application project methodology such as i.e. SCRUM and other development methods which utilize strategically thinking prior to start developing.

All these app product considerations will contribute to create real innovation value for the users. Still the app company need to succeed with several other tasks to be sure that value creation is obtained by the target market and users. Defining success criteria's are one of them; both for the internal development/project success and external success after launch. When almost 80% of the companies not always defining success criteria's, this should be considered, hence the relationship with the numbers of downloads or subscriptions and the number of user reviews which indeed is two external measurements for if real innovation value is created and therefore contributes to increasing the success rate.

78% of the companies who always define the app value prior to starting development, have more accumulated user reviews than they who don't, but the most successful apps delivered from the companies have only 1 to 20 reviews (67%), this is below average (Hoon et al. 2013).

This can be explained with that many of the companies only deliver in-house enterprise apps, and that the rest are split between native (Reviews via App stores) and web based apps (Reviews most often via company website/landing pages). Another reason is that some of the companies are relatively new start-ups with one or very few apps and very short time since their first app launch.

The majority of the company's focus on collaboration with customers or user communities when business needs, problems or challenges shall be analyzed for optimal app innovation value. This points out the importance of as early as possible in app development, to present both visual design and business logic with prototypes or mockups for assessing the innovation value and if the app does what it's supposed to do (Proof-Of-Concept verification). The majority of the companies assess the Proof-Of-Concept after prototyping.

Almost 90% of the respondents agree to that starting with an app innovation strategy first enhances the entire innovation process. (This is opposite to the increasing fanbase that supports a prototype first or LEAN approach).

It is still cheaper and faster to fail on paper in a planning phase, then to use more hours in creation fancy prototypes (Often tendency to focus more on visual design then business logic).

Another perception among the respondents are that a very few think complex innovative app features extend Product-Life- Cycles, and when it comes to creating competitive advantages, building complex innovative app features will not be sufficient to create competitive advantage.

Monetizing the apps is important and always important for business app owners. Among the participant companies the two top used revenue models are Freemium and subscription based revenue models. Surprisingly, none use Pay-Per-Download (PPD) models or In-App purchase models for upselling or cross-selling options. One reason for not using PPD, is that for business apps, choosing subscription based revenue models are favorable, creating recurring revenue streams empowering cash-flows and ease the budgeting and cost calculations and considerations for future new features and launches.

The majority of the respondents pinpoint social media marketing and digital branding as important for successful app user adoption, but only _few_ of the company's focus more on marketing app _benefits_ rather than app _features._ Marketing app benefits rather than app features (Specifications) are directly connected with communicating the value proposition and the Unique-Selling-Propositions (USPs).

The target commercial markets are split between existing mass markets and niche markets. The top 3 types of disruption the companies trying to apply and use in their respective markets are equally distributed between; technology disruption, creative disruption and business model disruption. _None_ of the respondents picked price disruption as option. Only 33% agree to that low price strategies are the way to go to build market momentum quickly. The most used app price strategies among the companies are; medium price and low price for incremental app innovations. None chooses to go out with high prices (This option lead

historical to a "wait and see" approach from potential buyers), and that has been a challenge for a long period especially for native apps via app stores (less price sensitivity with apps with subscription models).

Very few of the companies choose the tactical choice of adding more features to enhance the product value rather than reducing the price. Adding more features (And not dropping the price tag) helps keeping the gross margin and profit higher, and should be the first tactic to put into action before considering reducing app pricing.

The most common disruptive forces the companies are threatened by them self are: technology disruption and market disruption. This seems reasonable when the majority in the app world uses homogeneous models. So there is far longer between business model disruptions in the app world, mainly because of the distribution models available to anyone.

The business model disruptions are most likely to appear with web apps outside the biggest app stores (Less lock-ins and bureaucracy) and within new types of subscription models, diversified products or product bundles.

The average Product-Life-Cycle before upgrading with new major re-innovations are; <6 months (44%), <8 months (22%), <10 months (22%) and <2 months (11%). The best or most favorable apps out there, have frequently releases to keep the competitive advantages, and for positive brand equity.

Very few monetize multi-sided markets, and that could be explained by that the majority deliver in-house enterprise apps or unique business apps just for one customer at once. Only 33% agree to that building an app for multi-sided platforms increases number of user adoptions and profit, while 56% don't know enough about this product strategy path. Selling business apps for multi-sided markets can for some companies help create multiple revenue streams and increase profit.

Knowing what sales numbers (or downloads or subscriptions) a company needs to cover their development costs seems mandatory. Still, only 44% calculate break-even and/or ROI after defining purpose, vision and value before prototyping and app development starts.

The following prioritized calculations to consider from the respondents point of view are: ROI (44%), Gross Margin (22%) and Payback (11%). None points out Break-Even sales or units

or cash-flow/Profit & Loss. Just above the half of the companies has experienced increased spending per app (User Acquisition Cost) for the last 3 years. When it comes to profit per app 56% have experienced increased profit, 11% have experienced decreased profit, while 33% don't know this data.

These two questions (Q53 and Q54) and responses correlate in that matter that to increase profit, you have to use more money on user acquisition costs (Marketing and distribution costs).

When it comes to strategically choices between making radical innovations and incremental innovations and their influence on profit, the respondents points out that incremental app innovations (67%) gives the best profit, while 33% don't know these kind of business and innovation intelligence.

In particular, evidence found where that <u>none</u> points out radical app innovations as the lucrative choice.

4 areas was pointed out as the highest risks within B2B/business app development; budgets (78%), time scope (67%), innovation process (33%) and lack of available resources. There is a big difference in keeping innovation "in mind" among a team versus to dedicate one person as key responsible for innovation processes (and creativity processes) within app development.

When 67% of the companies distribute the focus on innovation to all team members, and only 22% have dedicated persons in the role of Innovation Manager, while 11% point out the Marketing Manager as responsible for Innovation Management, this concern is addressed as a key finding.

4.4 Analyzing qualitative data results (Appendix C3)

In this section are the qualitative research data analyzed, with selected respondent answers with high validity highlighted. All the respondent answers are presented in the appendix C3, including the respective tables for confirmability.

There are key findings highlighted with green arrows in the tables, responses with misinterpreted survey questions (or typed N.A.) or answers with low research validity/reliability are highlighted with red arrows.

Due to the nature of radical and incremental app innovations; how and when does a <u>radical</u> app innovation lead to high growth/high number of user adoptions (Q18)? The respondents point out when both a concrete purpose and need is identified and solved, and when the app really solves a problem and when potential buyers understand <u>why</u> they want to use (Acquire) the app (That potential buyers understand the app value proposition and USPs). Other respondents emphasize if good UX are delivered and when users embrace the app technology this will trigger viral marketing (Achieving high degree of innovation value).

Free trials and Freemium business models are also pointed out as two ways of boosting user adoptions. One respondent's reflection stands out from the others: *"…the product does not win, distribution does!"* (Table C3-Q18). Smart app store tactics and digital marketing are pointed out to help boost distribution.

How and when does <u>incremental</u> B2B app innovations lead to high growth/high number of user adoptions? (Q19). Both the importance of user feedback, fanbase (app community) and when users (and market) embrace one technology (Dominant design). One reflection among a few answers stands out: *"By focusing on the core features that the product idea solves first for the business clients. By focusing on the functionality with the highest business value first, you prove value…"* (Table C3-Q19).

These reflections works as a bridge to the next aspects; How does your team plan for balancing the level or complexity of innovative B2B app features with UI & UX? (Q22): The respondents point out the following; Learning from the best (high absorptive capacity), LEAN approach building limited functionality - measure and adapt, prototyping, removing unnecessary UI elements, drafting and feedback rounds, simplifying techniques, iterations until perfection, not re-inventing the wheel UI/UX (Table C3-Q22). How does your company

verify that the B2B app(s) really delivers unique value for the users? (Q26): The respondents points out that LEAN approach with measuring, early usability studies of prototypes, UX studies as early and often as necessary combined with app usage statistics and continuous communication (Engagement tactics) with the users (Customers). Frequently competitor search (and assessments i.e. SWOT analyzes), frequently new feature (Re-innovation) development, customer retention and ROI are other elements pointed out by the respondents.

One reflection stands out regarding how to verify apps real and unique value: *"...if our app is disruptive, then we feel that it delivers unique value"* (Table C3-Q26).

How does your team manage tacit knowledge to create innovative apps? (Q29): The minority of respondents tell their respective companies are using; collaborative/sharing sessions, project reviews, open work culture, rewarding project members who produce breakthrough ideas, documentation of thought process and simply (Don't stop) asking questions (Table C3-Q29).

What processes does your organization use to create competitive advantage of absorptive capacity? (Q30): The processes replied are; one person responsible for a field of interest with mandate to distributing the knowledge inside the company, several days per year devoted to share knowledge, following external various developer groups to seek out new information and relate (and adapt) this to own products, 20% R&D/play/read-time for everyone (copied off Google), internal wiki, Facebook groups as sources for external information.

One respondent stated; *"Working closely with the customer, understanding their business, their pains, their ambitions and how they want to evolve, and how we can help deliver this via our fresh viewpoint and technical skills"* (Table C3-Q30).

How does your company screen and monitor the existing B2B app market as part of your competitive app analysis?: The respondents points out the following; following trends on twitter (external search), various statistics-tools, screening app stores (internal search), monitoring existing players included in online marketing work (Table C3-Q45).

What <u>key business</u> measurements (KPIs) are the most important to monitor after launch? (Q51). The respondents list the following valuable KPIs; conversion rate, subscriptions, downloads, acquisitions/adoptions, usage, visitor loyalty, visitor recency, feedback and revenue stream generation (Table C3-Q51).

What <u>key app</u> measurements (KPIs) are the most important to monitor after launch? (Q52): The respondents points out the following; visits to download ratio (Conversion rate), bug/error checking, usage, retention rate, UX, load time, app and server speeds, customer service, response time, user feedback (I.e.happiness sentiment), and PR and social media mentions. Another reflection is the maintainability and upgrade path (Table C3-Q52).

4.4.1 Key qualitative findings – interpretation

The qualitative research data offers evidence that to be able to monetize radical app innovations resulting in big download or subscription numbers, it is important to identify both a concrete purpose and need, solve it and then market the value proposition and USPs. This is especially important for radical innovations hence they are new to the market and new to the users.

Therefor is it even more useful for radical app innovations to strategically deploy Free trials and Freemium business models for boosting user adoptions. Choosing the distribution (Cross-) channels more carefully for radical app innovations, should also be considered. For incremental innovations, building on existing products, and targeting a more mature market (More competitors), frequent user feedback, building digital fanbase (Own app community via Social Media Marketing) and try to build the winning dominant design among the competitors.

When it comes to balancing the level or complexity of innovative B2B app features with UI & UX; both high absorptive capacity, LEAN approach, simplifying techniques, iterations until perfection and not try to re-inventing the wheel are all methods that should help the product development so the app not turns out to be a commodity product or to advanced, failing to capture the right level of innovation value for the target users. Tactical approaches for innovation value assessment are LEAN approach with measuring, early usability studies of prototypes, engagement tactics and frequently new features released. If the app developers succeed creating disruptive innovations into the app product, this is a very good

indication that a high degree of value creation is reached. Using collaborative and sharing sessions, project reviews and building an open work culture strengthens the ability to harvest tacit knowledge to create innovative apps.

The ability of creating competitive advantage of absorptive capacity, key factors pinpointed are distributing the knowledge inside the company, put time aside to share knowledge for example *20% R&D/play/read-time* for everyone.

Monitoring competitors with using social media monitoring tools can be efficient tools to build intelligent market and product insights for planning new strategies or tactics. In particular, the survey data pinpoints that to create real innovation value and value creation, there is not a few success factors, but many. In addition, the survey data demonstrated that defining KPIs and monitor both business and app measurements can help growing and give useful insights putting new actions to life.

4.4.2 Overall research data interpretation of key findings

In particular, the empirical research evidence revealed is leading to the following overall interpretation related to the research objectives: The research data analysis process lead to the suggestion of the following propositions which summarize the overall deductive and inductive research key findings:

Research objective 1 (Value creation) related themes:

- *Hyper-speed* of strategically planning & execution
- Defining purpose, vision and value <u>early</u> enhance innovation value & value creation
- Succeeding creating value innovation boost both user adoptions and user reviews
- Strategy first approach has more credible benefits and enhances the innovation process
- Assessing Proof-Of-Concept after prototyping enhances the innovation process
- App Product-Life-Cycle must iterate fast to keep competitive advantages
- Premium apps must be created without unnecessary complex innovation features to avoid negative User eXperience (UX)
- Rapid user feedbacks in all phases of iterative development empower the innovation value

Research objective 2 related themes (User adoptions):

- Social Media Marketing is the smartest low cost communication strategy
- Frequent user engagement are crucial – use interaction and push communication tools
- Trials and Freemium models are favorable and empower diffusion and user adoptions
- Use of in-app up-selling and cross-selling features can help boosting sales
- Data analysis of app performance and behavior empower new optimized tactics

Research objective 3 related themes (Disruptive innovation):

- Market disruption and creative disruption are the weapon of choice to conquer target markets (Not price disruption)
- Medium price are the smartest choice from app launch for incremental innovations
- Low price from launch is not the best strategically choice; Rather use a Freemium model (Free + Premium version with medium price)
- Radical technological app innovations are not the best choice hence cost, time to market and profit considerations for most developer companies
- Target mass markets with medium price and niche markets with higher price tags

Research objective 4 related themes (Profit):

- App calculations early (before prototyping) determines costs, Break-Even point, ROI, sales forecasts, cash-flow scenarios and strategic profit margin
- Freemium business models elevate revenue streams
- Subscription models are favorable (versus Pay-Per-Download) and empower cash-flows
- Shorter subscription plan models gives better profit scenarios than longer ones
- Choosing medium price tag increases growth rate and profit margins, and makes a buffer for being market or price disrupted
- Defining and measuring both business and app KPIs help decision making and new actions

5. Discussion of the overall research key findings

All the original data responses are presented unbiased in appendix C1, C2 and C3 with screen-shots of the data from the cloud based web survey tool Enalyzer, providing observability and controllability for objectivity, validity and reliability assessment.

Let's sum up the **research objective (1)** related key findings and look at what variables and characteristics that impact value creation the most:

Creating business apps is all about creating value. Value for the app users, and profit for the app producer/app owner. Everyone agrees on that. Many app ideas start with analyzing the challenge or problem and how this should be solved with the app. So far so good. But then one or several of the next steps fails; utilizing visual design (UI/UX) versus business logic during prototyping (Hughes 2011), starting app development without early verify the Proof-Of-Concept and/or starting development with insufficient competitor search and assessment (ibid), including Freedom-To-Operate (FTO) analysis to avoid infringement (Smith 2010).

Focusing on how to create real innovation value (Kim and Mauborgne 1999; Fernandes and Martins 2011) and app price value tactics (Dell'Era et al. 2013; Holzer and Ondrus 2011; Hughes 2011) after (preferable before) prototyping and approval of the Proof-Of-Concept as the following task will clearly determine if the app product should be developed or not.

What price tag can be decided on from launch based on the type of characteristics for the target market? (Identifying the numbers of competitors and/or equivalent apps?). How can the app differentiate? (ibid). It is here the Blue Ocean Strategy and tactics kicks in; creating a business app that makes competition increasingly irrelevant or inadequate (Kim and Mauborgne 2005a; 2005b).

Let's discuss the key research findings, following the chronology of a typical Product-Life-Cycle for a B2B/business app, starting from ideation to entry and launch, and continued releases and new innovations or exit strategy and End-Of-Life (EOL).

Every app starts with an idea. The ideation process should address how a Value Based Innovation strategy could be implemented, resulting in a written app innovation strategy document, identifying and defining; the purpose, vision, the challenge or problem and describe how the app should solve it (Hughes 2011).

Failing to address the very purpose and/or vision for the app will dramatically reduce the innovation value, value creation and byer´s value alignment and perception.

Success criteria's should also be identified and defined, both for enhancing the quality of the internal development process, and after launch by monitoring KPIs for both business and app measurements.

After writing the first value-centric innovation strategy for the app, some sort of early specification overview must adhere. The insights these early phase specifications should give are i.e. innovation levels and complexity including the need for integrations to other systems (APIs), databases and other back-end systems.

Before using money or too much time creating prototypes, should Break-Even Sales/Units and ROI be calculated and evaluated. There's no point in using time and money in prototypes, if the Break-Even and ROI analysis tells that you need unreachable sales volume to cover your development costs. But if the Break-Even calculations are promising and Break-Even Point (BEP) within reasonable reach (Break-Even example in appendix D), then it is possible to also calculate some qualified cash-flow scenarios, giving enough data to also build the first sound development budget (Hughes 2011).

To determine if the target users understand the value alignment and accept the innovation value, ask them how the app benefits reduce their i.e. manually routines and identify their cost for the tasks and then assess the cost/benefit result. Then get the feedback for planned strategic price. Then it is possible to define the strategic price, target cost and target profit and put optimized tactics into action (Hughes 2011; Kim and Mauborgne 2005a).

After these initial economic considerations and assessments, then it's time to do some rapid prototyping! Either with prototype tools or with use of cloud based app creator services, both tools for early feedbacks from both beta testers and target users to be able to create user centric customization and a high degree of innovation value. There are big differences in cost structure between simple, low end business apps and advanced high end apps (Illustrated in appendix E), when cloud based app development costs are matched against traditional development path and costs (Heitkötter et al. 2013; Holzer and Ondrus 2011).

Cloud based app creator services (SaaS, MBaaS and PaaS), are in some cases a much faster alternative way to finished product then to first build a prototype and then use other common development programming tools to create the app. A cloud based app creator service can work as both a full functional real time prototype tool and at the same time development and coding tool. Another time and cost saving feature some cloud based tools provide is automatic test ability.

When using cloud based app creator services (I.e.: SaaS, BaaS and MBaaS) such as i.e.: Microsoft Azure, AppGyver, ShoutEm, kony or Appcelerator, the first version of a simple (not advanced) app can be real time developed in hours, even in minutes! Then if this version is tested, verified and approved including Proof-Of-Concept, it can be easily published or sent for app store approval.

The Value-centric Innovation strategically process should lead to the new market space or innovation "Hot spot" (BOS: Value curve) when done optimally should possess several competitive advantages (Kim and Mauborgne 2005a; 2005b).

Let's sum up the next **research objective (2)** related key findings and look at what attributes that impact and enhance high user adoptions:

Social Media Marketing (Word-Of-Mouth Marketing/viral marketing) are today's smartest and most cost effective tools for marketing and communication (Hughes 2011; Hoon et al. 2013; Verhoef and Lemon 2013). Social Media Marketing based on a sound message, will empower the value proposition and USPs needed to create digital visibility, reach and brand awareness.
Marketing a new app should start long time before launch, and this way is able to build a crowd of potential buyers and fans already from i.e. beta testing and beta launches (ibid). Social Media Marketing of the value proposition, the key message (USPs), benefits rather than just features are essential (ibid).

Targeting innovators and early adopters both before and after launch is still smart, but Social Media Marketing and online PR create new ways to engage all adopter segments simultaneously!

There no need to wait out the two first adoption segment (Roger's adoption cycle) ambassadors (Tech/app bloggers and writers with high digital visibility and reach and reputation) to start viral communication (Twitter, Google+, Pinterest), while Social Media Marketing today give the opportunity to communicate in different tone of voice and diversified content adapted to target the early and late majority adopters (LinkedIn, YouTube, Vimeo, Instagram) concurrently. This is adoptable for all digital products.

Trials, bundles (Bresnahan et al. 2013; Hughes 2011; Quelch 2007) and Free (Anderson 2009, Arora 2014, Boudreau 2012) versions are all well researched smart strategies to boost both brand awareness and user acquisition rates. Cross app store publishing strategy is the way to boost distribution of apps (Distimo 2012), and to polish App Store Optimization (ASO) and presentation (Trademob 2013) with both video, screen-shots, clear copy writing of the value proposition and USPs and to monitor and response to relevant user reviews (Hoon et al. 2013; Jung et al. 2012).

After launch of a new app or new release or version of existing apps, frequently user engagement must adhere; continued interaction and dialogue with both existing users and potential buyers both with digital branding and UX feedback in mind (Verhoef and Lemon 2013). Ultimately building customer engagement via own app community via corporate websites, blogs, forums (Open or closed with login). This kind of feedback must be pursued continuously during an app Product-Life-Cycle (ibid). The insights feedback gives, should always been discussed and prioritized for new planned features or versions, due to the markets and users demand of frequently releases and to keep competitive advantages.

The strategies should also consider use of free Trials (Arora 2014; Hughes 2011) and Freemium models (Osterwalder and Pigneur 2010; Hughes 2011; Anderson 2009), easy to opt-in (and easy to opt-out) trials (Hughes 2011) these strategies and tactics will boost diffusion and user adoptions, better than other known strategies (Hughes 2011; Vision Mobile 2013; 2014; 2015). Tactics after launch to enhance engagement and retention ratios, both via In-App rich push messaging and notifications; in-app up-selling and cross-selling technologies and techniques should be implemented when possible. In-app ads can be the way of monetizing a strictly free app version opposite to a Freemium version with one free

version optional without ads, monetized by the revenue stream from the Premium version (ibid).

In addition can time limited and boost campaigns (Hughes 2011; Trademob 2013) kick start launches or new app releases. Both successfully deployed; full version trials, bundles, Freemium, social media marketing, online PR, cross app store distribution and boost campaigns all contributes to more effectively and faster *cross the Chasm* (Byers et al. 2011).

The last puzzle of successful user adoptions is data analysis of app performance and user behavior. To be able to monitor success criteria's and defined business and app KPIs, analytics tools must be deployed and used.

"You can't manage what you don't measure!" this is an old management adage quoted by Peter Drucker that is accurate today, and especially adaptable for all digital products and businesses. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it.

Using services from i.e. Urban Airship or Parse will give invaluable insights from first launch and the critical first days and weeks. The main success criteria's to measure are i.e.: acquisition rates, engagement (Via in-app push messaging and Social Media, user reviews), conversion and retention rates. This way it is possible to take action and use new optimized tactics to boost diffusion and user adoptions.

Let's sum up the **research objective (3)** related key findings and look at what variables that impact disruption:

Building apps with technology disruption or use of marketing disruption (Christensen 2003), are the weapons of choice among the participant companies. A high level of "smart" app features (Hughes 2011) with high level of value innovation (Vertical differentiation; creates a new or different value) and will be able to disrupt other players (Fernandes and Martins 2011; Kim and Mauborgne 2005a; 2005b).

The last choice of disruptive strategies is to use price disruption as differentiation weapon against competitors, but lowering the price tag will damage your own profit margin, if not successfully increase the user adoption speed and conversion rates (Hughes 2011; Dell'Era et al. 2013).

Vertical differentiation offers the app company or app owner a much more sound foundation for building premium apps and premium brand equity.

A Freemium business model is highly disruptive in many B2B markets, and a much better diffusion and user adoption alternative than trying to disrupt with one single app version with a low price strategy. A low price tag for business apps, could also send the wrong message; that less you pay, less value for the money and get perceived value alignment as a low value or commodity product (Fernandes and Martins 2011) even if it actually does have radical high value functionality and benefits (Bresnahan et al. 2013; Hughes 2011) .

Based on these reflections and research findings, launching radical value-centric apps with medium price tag seem to be the best option. If priced in the highest price range of the market, people tend to test or buy less expensive alternative apps first (ibid). This tactic works best in mass markets, within niche markets and with Blue Ocean strategy exploiting a unique value curve (Innovation Hot spot).

It should still be possible to get the price tag higher until new entrants (Followers) arrive and disrupt with technology, market, price or creative disruptiveness (Christensen 2003; Fernandes and Martins 2011; Kim and Mauborgne 2005a; 2005b; Waldman 2010).

Let's sum up the **research objective (4)** related key findings and look at what variables that impact and enhance profit margins and profitability:

As earlier elaborated related to the research objective 1; identifying the buyers value alignment at the beginning of a new app development project, using strategic calculations such as Break-Even-Point, profit & loss and sales forecasts will bring sound understanding both of the strategic price (the price customers are willing to pay) and target costs (Hughes 2011; Kim and Mauborgne 1999; 2005a). In addition should the app owner whether it is the app company itself that own the app or if it's developed on contracting for its customer (The app entrepreneur).

App development companies that develop apps on contracting basis should also concern about both the Break-Even point, ROI and payback time for their customers regarding building their own reputation for successfully app projects, diffusion and user adoptions.

Both scenarios should lead to sound cash-flow predictions helping the app owner about prioritizing app innovation features, levels and complexity matched against both target cost (development costs), time to market, strategic price (Kim and Mauborgne 2005a) and marketing spending (Hughes 2011; Bresnahan et al. 2013, Vision Mobile 2014; 2015).

Freemium (Anderson 2009; Arora 2014; Hughes 2011, trials (Bresnahan et al. 2013; Hughes 2011) and bundle (Hughes 2011; Quelch 2007) models should be considered whether a first-mover or follower strategy is decided on, due the excellent track record these models offer (Hughes 2011; Vision Mobile 2014; 2015). When Freemium offer boosting diffusion and user adoptions, this is not equal to high profit margin (Vision Mobile 2015).

When diffusion increases, so does the marketing spending, especially for apps via app stores (Trademob 2013). So high growth and rapid user adoptions don't necessary meaning increased profit margins.

These facts should be considered and assessed when defining sales and download volumes; it can be more profitable to be among top 25 rather than top 5 in the app stores (Ibid). This can be outsmarted with web apps with subscription based business model with recurring revenue streams; here can use of Social Media Marketing and online PR contribute to lowering the marketing spending and user acquisition costs (CPA) compared to native app marketing which urgently need marketing and distribution services to achieve a tipping point (Arora 2014, Bresnahan et al. 2013; Hughes 2011; Trademob 2013). Therefore should subscription models be more favorable versus Pay-Per-Download both because it is possible to achieve lower marketing spending per user acquisition and subscription models sure will empower and ensure more stability and strength of cash-flows (Hughes 2011).

Another point is that shorter subscription plans probably gives better profit scenarios than longer ones because; the buyer decision are more easily made related to commit to shorter subscription plans (Gives higher adoption rates) with easy to opt-in and opt-out rather than

offering 6 or 12 months plans that will obviously bounce off potential byers directing them to other app choices with shorter plans! (Monthly plans preferred from the byers perspective) (Hughes 2011).

So choosing a medium price tag will increase profit margins because it both targets a wider range within the market (Kim and Mauborgne 1999), and because it will attract more adopters faster. Cross-platform distribution with a medium to low price can also be smart monetizing a much wider market potential (Heitkötter et al. 2013).

In addition, opposite to use a low price tactic, a medium price tag makes a financial buffer for being disrupted by followers and late entrants. How does a first-mover or follower strategy affect the app revenue stream and profit? From a profit point of view; which approaches are the most desirable? The user adoption base are much lower for first-movers (Innovators: 2.5% + Early adopters: 13.5%) than for followers (early majority: 34% + late majority: 34%) (Byers et al. 2011).

Within the mobile app ecosystem, copying and to imitate is far more easy than for non-digital products and businesses. The time window for monetizing a competitive advantage with radical innovations and extend Product-Life-Cycle, are increasingly difficult in a hyper competitive and transparent app world. The level of innovative features and complexity in this case must strive to both be rare and inimitable but at the same time avoid a high degree of perceived complexity from the adopters (Byers et al. 2011), if not the follower can entry the market both faster and cheaper and disrupt the existing market (Kim and Mauborgne 1999; Fernandes and Martins 2011; Christensen 2001).

Head to head competition in the red ocean will continue until the market space is saturated or punctuated equilibrium occurs. Incremental app innovations are far more cost effective, targeting a more mature market and on average gives shorter time to market. The factors discussed in this section will contribute to achieve sustainable profit, and maybe keep profit margin for a longer time frame within the Product-Life-Cycle. When should an exit strategy be deployed from a profit point of view? If Break-Even Point not is reached within 3-6 (6 months average half-life, and adoptions rates drop fast) the market response is not probably positive. Of course it is possible to keep on what you're already doing, but a few have money to take a wait and see approach! Reasons can be that the value proposition is not

understood by the target market, or the app is too complex for the users or crashes with existing user experiences or practices (Byers et al. 2011; Hughes 2011); either way some new actions should be considered.

Assessing the areas the app marketing or diffusion fail and then fast change things and optimize what's not working. It is when diffusion and user adoption never kicks off or slowing down that use of analytics tools (Verhoef and Lemon 2013) became very handy. These tools will help enormously and often pinpoint where to change tactics related to marketing and promotion spending. If the app is lacking its value purpose this should be determined by monitoring both beta testers' feedback and reviews (Hoon et al. 2013) after launch.

If the app innovation value or byer value fail, the app should be rapidly upgraded or withdrawal from the market until a new optimized version can be launched. Otherwise, achieving few adoptions and understood with poorly reviews will first hurt the brand and then very fast; the profitability. Then it will take some time to build trust and loyalty if not already destroyed. In the app world reputation can be destroyed faster than ever before because of negative word-of-mouth spread within social media channels (Hughes 2011; Edwards and Day 2005; Haugestad 2010).

Let's sum up the research **objective** (**5**) results the proposed Value-centric Innovation Strategy model.

Value-centric Innovation Strategy - Check list

Assembling theories and frameworks from this paper and adding insights from the survey findings provide the following proposed B2B Mobile app innovation strategically assessments to consider:

- Identify and define the *problem* or *challenge*
- Analyze defined and unarticulated needs
- Decide on first-mover or follower innovation approach
- Ideation and brainstorming (Open – Closed – Hybrid innovation)
- Identify and define Value-centric App Innovations
- Competitor research and analysis
- Break-Even & Target Cost & Target profit & cash-flow and ROI analyses
- Strategic price strategies
- Target cost
- Identify and define the new value curve (Innovation Hot spot)
- Identify and define target uncontested market space (New value curve)
- Monetization Strategy: Choice of business and revenue stream models
- Profitability by multiple and/or recurring revenue streams more important than fast diffusion
- Mobility Maturity Assessment of target users/market
- Road map with a prioritized list of value-oriented transient advantages
- Decide on technical app development path and coding frameworks
- App Specifications & Requirements
- Technology Review & Development Path Strategy
- Proof-Of-Concept by external experts
  - App marketing & Community Building strategy
  - Social Media Marketing and digital branding strategies
  - User Engagement Strategy
  - Digital Content strategy
  - Online reputation management

6. Limitations of the research

One limitation of this research is that it is based on a quite small sample of respondents. With the available time scope for the research, the survey design focused on a selection of key aspects of the Value Based Innovation strategy and Blue Ocean Strategy frameworks related and adaptable for B2B/business app development companies and their app Product-Life-Cycles.

Another limitation is if more intricate crossed queries had been performed, new possible findings could be revealed. That said, there are some findings with obviously evidence and correlations, others are interpreted on a weaker foundation. The research data and findings also have some spurious correlations. Spurious correlation is shortly a false presumption that two variables are correlated when in reality they are not. Spurious correlation is often a result of a unknown (the X factor) third factor that is not apparent in the research design, questionnaire, data queries or data exports at the time of examination.

This research utilizes a qualitative priority where a greater emphasis is placed on the qualitative methods and the quantitative methods are used in a secondary role during the overall interpretation.

Hence the quantitative data are used in a secondary role, generalization of the research data findings is for example not an objective within this research scope hence few respondents. This concludes that the survey data collection and data samples is representative enough to demonstrate the method and its possibilities, which easily can be adopted and further scaled up and developed for future research.

7. Outlook for future research

The research findings provide proof that there is need for more research on the field Value-centric Innovation strategy, to better understand the diversified reasons why some apps fail, while others succeed and become accepted in the market related to innovation; types, levels, cycles, complexity and archetypes.

Future research should be focusing on and emphasize more within the nature of innovation strategy, rather than mobile and tablet OS, platforms, development tools and their market shares.

Mixed methods with utilized qualitative methodology in future explorative research should be applied for more in-depth understanding of the fundaments of value creation and innovation value of business apps linked to high growth user adoptions and profitability.

In conclusion, hopefully will the propositions, suggested model and key findings formulated in this thesis offer some guidance for further explorative academic research.

8. Conclusions

Value-centric innovation strategies and related frameworks are powerful ways of identifying and defining real value creation, innovation value and price value. Further, the Blue Ocean Strategy (BOS) framework additionally elevate and operationalize the objective of identifying and defining uncontested market space assessing competitive advantages and differentiation capabilities avoiding head to head competition, realized with a new value curve (Innovation Hot spot).

The consensus across the included literature and industry reports provides profound evidence within the research purpose, context and scope; the importance of strategy is <u>not</u> obsolete. While smashing designed prototypes creates curiosity and shows complexity and observability, strategy shows the smartest innovation path; it is still fastest and cheapest to fail on paper. But of course; sound app innovation strategy without excellent design and content fails as well. In today's hyper-competitive B2B app marketplace, simply creating a great app isn't enough: Strategy planning, business development and innovation management in early app innovation phases are all strong tools not only to *reduce risk*, but to identify the most profitable market space in a hyper competitive and flux app market.

How can Value-centric Innovation strategy enhance B2B/Business App Product-Life-Cycle?

There is no shortcut or simple answer to the research question. There are many aspects and variables that impact; value creation, user adoptions, disruptive innovation and profit, which some essential aspects are discussed within this Master thesis.

The research findings bring evidence that a Value-centric innovation strategy model enhance the strategically thinking process and helps determine value creation with focus on early app calculations of Break-Even point, ROI and cash-flow scenarios.

In addition, Value-centric strategies combined with the BOS framework empower the process of defining the strategic price, target cost and target profit. Asking target customers early for feedback about perceived; value creation, innovation value and price value should give optimized strategically insights and decision making. The result of these assessments will function as sound foundations for market entry decisions and further development cost and marketing budgets.

Marketing spending is a radically necessity for high growth user adoption especially within app store distribution. For diffusion and user adoption both inside and outside the app stores is social media marketing the key for building brand awareness, visibility and reach among the masses.

Proof-Of-Concept must be assessed and approved by <u>target users</u> very early.

Creating Value-centric Innovation strategies for B2B/business apps is all about early include target users and design a team of internal and external test pilots; creating a feedback loop via open innovation or hybrid. Assessing target market and assess the user Mobility Maturity level, will help decision making within innovation levels and complexity to match the compatibility with potential adopters.

Validation of prototypes and Proof-Of-Concept as early as possible will enhance the innovation value. Using cloud based app creators also as a "prototype" tool when it is suitable, really have the ability to speed up the time from Proof-Of-Concept, visual design and business logic approval, testing to launch.

A Value-centric Innovation strategically approach will empower the delivery of high quality mobile (or tablet) app experiences because VBI utilizes that a high degree of real value actually is created <u>and</u> delivered, adding both Customer Value Engagement measurements, business and app measurements to prove success.

Hopefully these reflections bring balance to the Lean approach or prototype first versus strategy first approach discussion.

Social Media Marketing should be deployed before first app launch, this provide the option of building a crowd of both external beta testers, and creating a community of product evangelists. With focus on dialogue, feedback-loop and engagement this should result in both a community with high loyalty and passion *before* and more importantly; *after* launch. This way viral marketing can help boosting the sales the first days and weeks of a new app or a new app version. Brand awareness and brand equity are not created overnight; earning trust and loyalty from *doing* not only from tag lines and slogans.

Value-centric innovation strategically approach will enhance the ability to create disruptive innovations because:

When all the same coding tools and frameworks, app stores and marketing tools are accessible for everyone, it is <u>how</u> they are implemented together with project and strategically frameworks that utilize and pursuing creating high degree of innovation value, value creation and price value alignment. Using the smartest, fastest, cost effective tools together with sound app development project methodology all grounded in a holistic Value-centric innovation strategy, will raise the odds.

A value-centric innovation approach can facilitate profit margins and profitability in several ways:

The research findings pinpoint that the strategically competitive advantages that Value-centric Innovation approach together with selecting the right innovation type; incremental innovation combined with radical innovation value, will increase the success rate for commercialization of B2B/business apps.

The research found evidence for that a follower approach with incremental innovation is favorable and more profitable. This together with market segmentations (Niche markets), product diversity (Trials, bundles & Freemium models), optimal (recurring) revenue models, smart business models, disruptive app features will all contribute to enhance diffusion, user adoption, revenue streams and then profit.

To pursue profitability, high growth and passion from adopters; true integrity, belief, transparency and culture for innovation must be built inside the organization and into the apps. Pursuing profitability by both Cross-platform strategies, IAP and subscription based revenue models offer multiple and/or recurring revenue streams rather than only focus on fast diffusion or reach top lists, which is increasingly costly.

When competitors and followers easily can copy the usage of technical tools and cloud services, these kinds of transient advantages will vaporize before rather than later.

Therefore are strategically skills within Value-centric Innovation, user adoption cycle mechanisms and trends together with Blue Ocean Strategy that all <u>together</u> contribute to build and maintain Product-Life-Cycles with disruptive competitive advantages.

Hopefully are some interesting findings revealed, adaptable and possible to be operationalized both for app development companies, app owners and app entrepreneurs.

Value-centric Innovation strategy as a (proposed) model adaptable for operationalized tactics will clearly give empowered insights for better strategically managerial decisions, both from the app owner and from an end user point of view (Increased user value).

Removing only a few of the analyzed strategically variables of the innovation strategy equation reduces the success rate dramatically related to; real value creation, high growth user adoptions, disruptive tactics, increased profit margins and profitability. It is the sum of strategy and tactics that elevate success.

Let's hope for many smart business apps with real user value and excellent UX that will challenge the established ways of doing things.

Competitive advantages are highly transient within the app world; app companies and app owners should <u>plan</u> for how they will be disrupted, that way they can deploy actionable defense tactics much faster.

"All men can see these tactics whereby I conquer, but what none can see is the <u>strategy</u> out of which victory is evolved" Quote by Sun Tzu, 544 - 496 BC (The Art of War).

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Appendix A: Survey e-mail invitation

Hi [FIRSTNAME] [LASTNAME]

Welcome and thank again for helping me out with this survey which I will analyze in my Master thesis.

All respondents get 3 working days deadline to take the survey. (Deadline: 02.07.14)

Click the link below to start the survey:

[SURVEY_LINK]

NB: It is not possible to stop the survey and continue another day, unfortunately! Then you have to start from question 1 again.

NOTE: When it is stated: B2B Mobile app; this term is widely adapted as both B2B/business apps including both mobile and tablet, and covers both native, hybrid, and web based apps.

The survey tool Enalyzer support responsive design, so feel free to use your favorite gadget during the survey for your convenience!

Both your name and company related data are guaranteed anonymity.

The survey questionnaire use combinations of "quick & click" questions and statements, designed as closed-ended questions.

9 open-ended questions are designed to seek for in-depth insights. Please write short and consistent, try to capture the essence of the question. 2 open-ended questions have opt-out choice.

You need to set aside approximately 25-35 minutes to fulfill the survey.

If you have any questions during the survey, just call me or send me a sign!

This survey has 6 main parts for exploring within B2B app innovation strategy:

- Company and team sizes and tech related stuff
- Innovation strategy attributes (Types, levels, complexity, and competitive advantage)
- Business models & revenue capture models
- Disruption, diffusion & user adoption strategies
- Related economic calculations and considerations
- Success criteria's & app measurements

Click away and good luck!

Grab a cup of your favorite coffee if you are in urgent need of one...

Alternative survey access and opt-out link below. [REFUSE_LINK]

Best regards

Rune Haugestad

Appendix B: Survey participant response and test screen-shot

Survey totals (All launches)	Number	Percentage
Total number of participants	16	100 %
No reply	4	25 %
Refusals	1	6 %
Incomplete replies	2	13 %
Completed interview	9	56 %

Figure B1. Web survey participants and fulfilment rates. Source: Enalyzer tool.
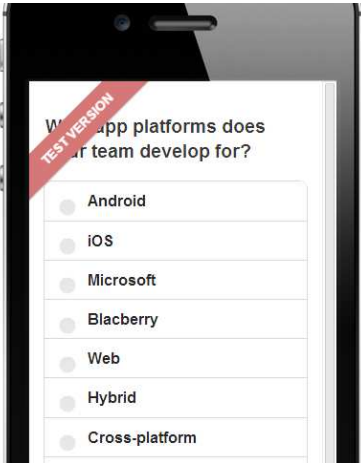
Figure B2. Web survey mobile test screen-shot. Source: Enalyzer tool.

Appendix C1: Web Survey Questionnaire & Responses – Quantitative Data

Note: Open-ended questions, appendix C2.

Data Variables (V) – Labeling	Related Questions & Numbering
V1: Value-centric App Innovation & business challenges	Questions: 9, 10, 11, 12, 13, 14, 15, 25,
V2: Value-centric App Innovation as key factor to create competitive advantage – levels & complexity	Questions: 16, 17, 20, 21, 23, 24, 39,
V4: First-Mover VS. Follower approach	Questions: 55
V5: App business model & revenue stream models	Questions: 27, 28
V7: App Innovation Management	Questions: 47, 48,
V8: Code framework & platform choices	Questions: 3, 4, 5, 6, 7, 8
V9: Marketing, disruption, diffusion & user adoption	Questions: 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 43, 44, 46, 56
V10: Success criteria's, Economical & app measurements	Questions: 49, 50, 51, 52, 53, 54

Table C1-V. Data variables (V1-V10) Quantitative data and related questions

Question 1:

How many people work in your company?

Nummer / Prosent	Totalt
1	0% 0
2-10	44% 4
11-20	22% 2
21-30	0% 0
31-50	0% 0
>51	33% 3
Totalt	100% 9

Table C1-Q1.

Question 2:

How many people work in your mobile app development team/department?

Nummer / Prosent	Totalt
1	0% 0
2-10	78% 7
11-20	11% 1
21-30	0% 0
>31	11% 1
Totalt	100% 9

Table C1-Q2.

Question 3:

What is your core work responsibility? (Pick one!)

Nummer / Prosent	Totalt
App project management	11% 1
App programming & development	44% 4
App product strategy	0% 0
App Innovation/R&D	11% 1
App marketing	11% 1
Other	22% 2
Totalt	100% 9

Table C1-Q3.

Question 4:

What app platforms does your team develop for?

Nummer / Prosent	Totalt
Android	0% 0
iOS	11% 1
Microsoft	0% 0
Blacberry	0% 0
Web	0% 0
Hybrid	0% 0
Cross-platform	44% 4
All of these platforms	44% 4
Other	0% 0
Totalt	100% 9

Table C1-Q4.

Question 5:

What programming code languages does your team use? NOTE: Multiple choice option!

Nummer / Prosent	Totalt
Visual Basic	0% 0
C/C++	22% 2
C#	56% 5
Objective C/XCode	89% 8
.NET	67% 6
HTML5	100% 9
Javascript	89% 8
J2ME	22% 2
Ruby on Rails	22% 2
Node.js	67% 6
Jungle/Python	22% 2
ALL	0% 0
Other	33% 3
Totalt	589% 53

Table C1-Q5.

Question 6:

Does your team use any cross-platform tools/frameworks today? If yes, name the provider(s)! Examples: PhoneGap, Adobe AIR, RhoMobile, Titanium, MoSync, Sencha Touch.

Nummer / Prosent	Totalt
No	11% 1
Yes > Name:	89% 8
Totalt	100% 9

Table C1-Q6.

Question 7:

Does your team use any cloud based app creator services to build apps today? If yes, name the provider(s)!

Nummer / Prosent	Totalt
No	100% 9
Yes > Name:	0% 0
Totalt	100% 9

Table C1-Q7.

Question 8:

Last 3 years our company/team have developed most B2B apps for:

Nummer / Prosent	Totalt
SmartPhones	67% 6
Tablets	33% 3
Totalt	100% 9

Table C1-Q8.

Question 9:

Does your team always define the B2B app (product) VISION prior to starting development?

Nummer / Prosent	Totalt
Yes	56% 5
No	33% 3
Don't know	11% 1
Totalt	100% 9

Table C1-Q9.

Question 10:

Does your team always define the B2B app PURPOSE prior to starting development?

Nummer / Prosent	Totalt
Yes	89% 8
No	11% 1
Don't know	0% 0
Totalt	100% 9

Table C1-Q10.

Question 11:

Does your team always define the B2B app VALUE prior to starting development? (Value = both user benefits and positive user price value assessment)

Nummer / Prosent	Totalt
Yes	78% 7
No	22% 2
Don't know	0% 0
Totalt	100% 9

Table C1-Q11.

Question 12:

What is the most important SWOT analysis for a new B2B app?

Nummer / Prosent	Totalt
Product SWOT	22% 2
Market SWOT	33% 3
Business model SWOT	44% 4
Totalt	100% 9

Table C1-Q12.

Question 13:

Does your team always define the B2B app success criteria's prior to starting development?

Nummer / Prosent	Totalt
Yes	22% 2
No	78% 7
Don't know	0% 0
Totalt	100% 9

Table C1-Q13.

Question 14:

How does your team identify user or business needs, problems or challenges? (To be solved with an app)

Nummer / Prosent	Totalt
Own developed method/framework	0% 0
Customers responsibility	11% 1
Always in collaboration with customer/user community	44% 4
Different approach from project to project	44% 4
Don't know	0% 0
Totalt	100% 9

Table C1-Q14.

Question 15:

At what stage does your company asses the Proof Of Concept for a B2B app?

Nummer / Prosent	Totalt
After screening the app market	11% 1
After prototyping	67% 6
After Alfa testing	0% 0
After Beta testing	0% 0
Don't know	22% 2
Totalt	100% 9

Table C1-Q15.

Question 16:

Statement: "Starting with an app innovation strategy first enhances the entire innovation process...!"

Nummer / Prosent	Totalt
Agree	89% 8
Disagree	11% 1
Don't know	0% 0
Totalt	100% 9

Table C1-Q16.

Question 17:

Do complex innovative B2B app features extend or shorten product life cycle?

Nummer / Prosent	Totalt
Extend	22% 2
Shorten	11% 1
Don't know	67% 6
Totalt	100% 9

Table C1-Q17.

Question 21:

Does the level or amount of complex innovative B2B app features lead to competitive advantage?

Nummer / Prosent	Totalt
Yes	22% 2
No	33% 3
Don't know	44% 4
Totalt	100% 9

Table C1-Q21.

Question 23:

What app types/features have your team developed most of across launched B2B apps?
NOTE: Multiple choice option!

Nummer / Prosent	Totalt
Productivity	44% 4
WorkFlow	67% 6
Knowledge	44% 4
Communication	56% 5
Social & Engagement	22% 2
Sales	33% 3
M-Commerce	11% 1
Marketing	56% 5
Branding	11% 1
Financial	0% 0
Collaborative	44% 4
Reporting	33% 3
Totalt	422% 38

Table C1-Q23.

Question 24:

Does most of your (or customer) B2B apps extend or transform businesses? Examples:
Extend (systems, routines, capabilities or resources) Transforming businesses meaning
deploying totally new ways of how they are doing business

Nummer / Prosent	Totalt
Extend	67% 6
Transform	22% 2
Don't know	11% 1
Totalt	100% 9

Table C1-Q24.

Question 27:

What is your (or customers) first choice of B2B app revenue model?

Nummer / Prosent	Totalt
Pay-Per-Download (PPD)	0% 0
Free with In App Ads	0% 0
Freemium	22% 2
In-App Purchase	0% 0
1 month subscription	11% 1
3 months subscription	0% 0
6 months subscription	0% 0
12 months subscription	11% 1
Other models	56% 5
Totalt	100% 9

Table C1-Q27.

Question 31:

How many B2B apps has your company/team launched?

Nummer / Prosent	Totalt
1-5	33% 3
6-20	67% 6
21-50	0% 0
>50	0% 0
Totalt	100% 9

Table C1-Q31.

Question 32:

How many downloads or subscriptions do your most successful B2B app have in total?

Nummer / Prosent	Totalt
1-1000	44% 4
1001-5000	22% 2
5001-10000	0% 0
10001-30000	11% 1
30001-60000	22% 2
60001-99999	0% 0
>100000	0% 0
Totalt	100% 9

Table C1-Q32.

Question 33:

How many user reviews does your most successful B2B app approximately have in total?
(App store reviews for native app or website reviews for web app)

Nummer / Prosent	Totalt
1-20	67% 6
21-50	11% 1
51-100	22% 2
101-300	0% 0
301-600	0% 0
601-999	0% 0
>1000	0% 0
Totalt	100% 9

Table C1-Q33.

Question 34:

Have one of your B2B apps hit any of the following App store Top lists?

Nummer / Prosent	Totalt
Top 10	11% 1
Top 20	0% 0
Top 100	0% 0
Top 200	0% 0
No	89% 8
Totalt	100% 9

Table C1-Q34.

Question 35:

How important are Social Media Marketing and Digital Branding for successful B2B app user adoption?

Nummer / Prosent	Totalt
Not important	22% 2
Somewhat important	44% 4
Very important	22% 2
Don't know	11% 1
Totalt	100% 9

Table C1-Q35.

Question 36:

Does your company (or customer) focus more on marketing app benefits rather than app features?

Nummer / Prosent	Totalt
Strongly agree	0% 0
Agree	22% 2
Neutral	22% 2
Disagree	11% 1
Strongly disagree	11% 1
Don't know	33% 3
Totalt	100% 9

Table C1-Q36.

Question 37:

Most of our (or customers) B2B app strategies pursue to:

Nummer / Prosent	Totalt
Create new markets (To avoid head-to-head competition)	11% 1
Target existing mass markets (More competition, but mature markets)	22% 2
Target niche markets (Less competition)	22% 2
Only in-house enterprise solutions	33% 3
Don't know	11% 1
Totalt	100% 9

Table C1-Q37.

Question 38:

What kind of disruptive forces does your B2B app(s) apply? (Disruption: to cause (something) to be unable to continue in the normal way: to interrupt the normal progress or activity (i.e.: marketing, sales, business model, business growth)

Nummer / Prosent	Totalt
Technology disruption	22% 2
Market disruption	11% 1
Price disruption	0% 0
Creative disruption	22% 2
Business model disruption	22% 2
Don't know	22% 2
Totalt	100% 9

Table C1-Q38.

Question 39:

What is your average Product-Life-Cycle for B2B apps before upgrading with new re-innovations to keep competitive advantage? (Not minor changes in functionality, integrations, UI or UX)

Nummer / Prosent	Totalt
<2 months	11% 1
<4 months	0% 0
<6 months	44% 4
<8 months	22% 2
>10 months	22% 2
Totalt	100% 9

Table C1-Q39.

Question 40:

Statement "We often monetize Multi-Sided markets with B2B mobile apps" (Multi-Sided markets = markets that link two or more distinct but interdependent groups of customers, often with usage of i.e. "Bait and hook" mechanisms)

Nummer / Prosent	Totalt
Agree	11% 1
Disagree	0% 0
Don't know	89% 8
Totalt	100% 9

Table C1-Q40.

Question 41:

Our (or customers) B2B app price strategy from launch usually is:

Nummer / Prosent	Totalt
High price (radical innovations)	0% 0
Medium price (radical innovations)	0% 0
Low price (incremental innovations)	22% 2
Medium price (incremental innovations)	33% 3
Other	22% 2
Don't know	22% 2
Totalt	100% 9

Table C1-Q41.

Question 42:

Our (or customer) price strategy is to price B2B apps low to build market momentum quickly

Nummer / Prosent	Totalt
Agree	33% 3
Disagree	22% 2
Don't know	44% 4
Totalt	100% 9

Table C1-Q42.

Question 43:

Our (or customer) price strategy is to price B2B apps high to increase profit, and then lower the price when new entrants or competitors creates apps with lower price

Nummer / Prosent	Totalt
Agree	11% 1
Disagree	56% 5
Don't know	33% 3
Totalt	100% 9

Table C1-Q43.

Question 44:

Statement: When competitors launch similar B2B apps, with lower price (or similar), we are adding more features to enhance product value rather than reducing the price

Nummer / Prosent	Totalt
Agree	22% 2
Disagree	11% 1
Don't know	67% 6
Totalt	100% 9

Table C1-Q44.

Question 46:

What type of disruption does your (or customers) B2B apps meet from new entrants or existing competitors?

Nummer / Prosent	Totalt
Technology disruption	11% 1
Market disruption	11% 1
Price disruption	0% 0
Creative disruption	0% 0
Business model disruption	0% 0
Don't know	78% 7
Totalt	100% 9

Table C1-Q46.

Question 47:

What areas stand out with highest risk within B2B app development? NOTE: Multiple choice option

Nummer / Prosent	Totalt
Strategically choices	22% 2
Time scope	67% 6
Budgets	78% 7
Creativity process	11% 1
Innovation process	33% 3
Technical complexity	0% 0
Lack of available resources	33% 3
Legal IPR issues	0% 0
Slow user adoptions	22% 2
Growing marketing cost	11% 1
Decreased profit margins	22% 2
Negative online reviews & reputation	11% 1
Totalt	311% 28

Table C1-Q47.

Question 48:

Statement: "Our company (or customer) always performs a "Freedom-To-Operate" (FTO) analysis to avoid infringement related to new B2B app products"

Nummer / Prosent	Totalt
Strongly agree	0% 0
Agree	11% 1
Neutral	22% 2
Disagree	22% 2
Strongly disagree	11% 1
Don't know	33% 3
Totalt	100% 9

Table C1-Q48.

Question 49:

When in the project scope does your company/team calculate the break-even sales/ break-even units (downloads/subscriptions) and/or ROI?

Nummer / Prosent	Totalt
Firstly	11% 1
After ideation and defining purpose, vision and value	44% 4
After prototyping and/or Proof-Of-Concept	0% 0
After strategy planning and formulation	11% 1
After budgets are agreed on	11% 1
Don't know	22% 2
Totalt	100% 9

Table C1-Q49.

Question 50:

What key economical calculations are the most important to analyze before starting the app development?

Nummer / Prosent	Totalt
Break-Even Sales	0% 0
Break-Even Units	0% 0
ROI	44% 4
Payback	11% 1
Cash-Flow/Profit & Loss	0% 0
Gross margin	22% 2
Don't know	22% 2
Totalt	100% 9

Table C1-Q50.

Question 53:

Have your (or customers) spending per app (User Acquisition Cost) increased or decreased last 3 years?

Nummer / Prosent	Totalt
Increased	56% 5
Decreased	11% 1
Don't know	33% 3
Totalt	100% 9

Table C1-Q53.

Question 54:

Have your (or customers) profit per app increased or decreased last 3 years?

Nummer / Prosent	Totalt
Increased	56% 5
Decreased	11% 1
Don't know	33% 3
Totalt	100% 9

Table C1-Q54.

Question 55:

With your experience, what B2B app innovation type, gives the best profit? (For the App owner)

Nummer / Prosent	Totalt
Radical innovations	0% 0
Incremental innovations	67% 6
Don't know	33% 3
Totalt	100% 9

Table C1-Q55.

Question 56:

Statement: "Building B2B Mobile apps for multi-sided platforms increases number of user adoptions and profit"

Nummer / Prosent	Totalt
Agree	33% 3
Disagree	11% 1
Don't know	56% 5
Totalt	100% 9

Table C1-Q56.

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Question 57:

Who is responsible for Innovation Management in your app team?

Nummer / Prosent	Totalt
Business Managers	0% 0
Team leaders	0% 0
Tech Lead	0% 0
Senior programmers	0% 0
Junior programmers	0% 0
Marketing responsible	11% 1
Innovation Management Manager/Responsible	22% 2
ALL team members contribute (Not one dedicated person)	67% 6
Don't know	0% 0
Totalt	100% 9

Table C1-Q57.

Appendix C2: Crossed Queries – Quantitative Data

Research Objectives	Data Variables (V) & Related Questions (Q)	Crossed queries for Correlation analyzes corr(A,B) = correlation of variables A and B (I.e.: Question 1, Question 2)
Objective **1**: Value-centric Innovation strategy > optimal value creation	V1: Q9, Q10, Q11, Q13	Q32
	V1: Q11	Q32
	V1: Q11	Q33
	Q16, Q17, Q25	Q15
Objective **2**: Value-centric Innovation strategy > high user adoption	V2: Q8, Q15	Q32, Q34
	Q20, Q21, Q39,	Q32, Q34
	Q23, Q24	Q32, Q34
Objective **3**: Value-centric Innovation strategy > disruptive innovation	Q37, Q38, Q46	Q39
Objective **4**: Value-centric Innovation strategy > increased app profit	V5: Q27, Q28, Q55	Q54
	Q: 11, 40, 41, 42, 43, 44, 53	Q54
	Q46	Q54

Table C2-CQ. Crossed Data Queries (Quantitative data).

Appendix C2 - Research objective 1:

Question 9 crossed with Q32: corr (Q9, Q32)

Table C2-Q9-32.

Question 10 crossed with Q32: corr (Q10, Q32)

Table C2-Q10-32.

Question 11 crossed with Q32: corr (Q11, Q32)

Does your team always define the B2B app VALUE prior to starting development? (Value = both user benefits and positive user price value assessment) Krysset med: How many downloads or subscriptions do your most successful B2B app have in total?

Nummer / Prosent (%-kolonne)	1-1000	1001-5000	5001-10000	10001-30000	30001-60000	60001-99999	>100000	Rekke Totalt (Respondenter)
Yes	75% 3	100% 2	0% 0	100% 1	50% 1	0% 0	0% 0	78% 7
No	25% 1	0% 0	0% 0	0% 0	50% 1	0% 0	0% 0	22% 2
Don't know	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Kolonne Totalt (Respondenter)	44% 4	22% 2	0% 0	11% 1	22% 2	0% 0	0% 0	-

Table C2-Q11-32.

Question 13 crossed with Q32: corr (Q13, Q32)

Does your team always define the B2B app success criteria's prior to starting development? Krysset med: How many downloads or subscriptions do your most successful B2B app have in total?

Nummer / Prosent (%-kolonne)	1-1000	1001-5000	5001-10000	10001-30000	30001-60000	60001-99999	>100000	Rekke Totalt (Respondenter)
Yes	25% 1	50% 1	0% 0	0% 0	0% 0	0% 0	0% 0	22% 2
No	75% 3	50% 1	0% 0	100% 1	100% 2	0% 0	0% 0	78% 7
Don't know	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Kolonne Totalt (Respondenter)	44% 4	22% 2	0% 0	11% 1	22% 2	0% 0	0% 0	-

Table C2-Q13-32.

Appendix C2: Research objective 2:

Question 11 crossed with Q33: corr (Q11, Q33)

Does your team always define the B2B app VALUE prior to starting development? (Value = both user benefits and positive user price value assessment) Krysset med: How many user reviews does your most successful B2B app approximately have in total? (App store reviews for native app or website reviews for web app)

Nummer / Prosent (%-kolonne)	1-20	21-50	51-100	101-300	301-600	601-999	>1000	Rekke Totalt (Respondenter)
Yes	83% 5	100% 1	50% 1	0% 0	0% 0	0% 0	0% 0	78% 7
No	17% 1	0% 0	50% 1	0% 0	0% 0	0% 0	0% 0	22% 2
Don't know	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Kolonne Totalt (Respondenter)	67% 6	11% 1	22% 2	0% 0	0% 0	0% 0	0% 0	-

Table C2-Q11-33.

Question 16 crossed with Q15: corr (Q16, Q15)

Statement: "Starting with building an app prototype or mockup first, and before any strategies enhance the entire innovation process...!" Krysset med: At what stage does your company asses the Proof Of Concept for a B2B app?

Nummer / Prosent (%-kolonne)	After screening the app market	After prototyping	After Alfa testing	After Beta testing	Don't know	Rekke Totalt (Respondenter)
Agree	0% 0	67% 4	0% 0	0% 0	50% 1	56% 5
Disagree	100% 1	17% 1	0% 0	0% 0	0% 0	22% 2
Don't know	0% 0	17% 1	0% 0	0% 0	50% 1	22% 2
Kolonne Totalt (Respondenter)	11% 1	67% 6	0% 0	0% 0	22% 2	-

Table C2-Q16-15.

Question 17 crossed with Q15: corr (Q17, Q15)

Statement: "Starting with an app innovation strategy first enhances the entire innovation process...!" Krysset med: At what stage does your company asses the Proof Of Concept for a B2B app?

Nummer / Prosent (%-kolonne)	After screening the app market	After prototyping	After Alfa testing	After Beta testing	Don't know	Rekke Totalt (Respondenter)
Agree	100% 1	83% 5	0% 0	0% 0	100% 2	89% 8
Disagree	0% 0	17% 1	0% 0	0% 0	0% 0	11% 1
Don't know	0% 0	0% 0	0% 0	0% 0	0% 0	0% 0
Kolonne Totalt (Respondenter)	11% 1	67% 6	0% 0	0% 0	22% 2	-

Table C2-Q17-15.

Appendix C2: Research Objective 3:

Question 37 crossed with Q39: corr (Q37, Q39)

Most of our (or customers) B2B app strategies pursue to: Krysset med: What is your average Product-Life-Cycle for B2B apps before upgrading with new re-innovations to keep competitive advantage? (Not minor changes in functionality, integrations, UI or UX)

Nummer / Prosent (%-kolonne)	<2 months	<4 months	<6 months	<8 months	>10 months	Rekke Totalt (Respondenter)
Create new markets (To avoid head-to-head competition)	0% 0	0% 0	25% 1	0% 0	0% 0	11% 1
Target existing mass markets (More competition, but mature markets)	100% 1	0% 0	25% 1	0% 0	0% 0	22% 2
Target niche markets (Less competition)	0% 0	0% 0	0% 0	100% 2	0% 0	22% 2
Only in-house enterprise solutions	0% 0	0% 0	50% 2	0% 0	50% 1	33% 3
Don't know	0% 0	0% 0	0% 0	0% 0	50% 1	11% 1
Kolonne Totalt (Respondenter)	11% 1	0% 0	44% 4	22% 2	22% 2	-

Table C2-Q37-39.

Appendix C2: Research Objective 4:

Question 27 crossed with Q54: corr (Q27, Q54)

What is your (or customers) first choice of B2B app revenue model? Krysset med: Have your (or customers) profit per app increased or decreased last 3 years?

Nummer / Prosent (%-kolonne)	Increased	Decreased	Don't know	Rekke Totalt (Respondenter)
Pay-Per-Download (PPD)	0% 0	0% 0	0% 0	0% 0
Free with In App Ads	0% 0	0% 0	0% 0	0% 0
Freemium	20% 1	0% 0	33% 1	22% 2
In-App Purchase	0% 0	0% 0	0% 0	0% 0
1 month subscription	20% 1	0% 0	0% 0	11% 1
3 months subscription	0% 0	0% 0	0% 0	0% 0
6 months subscription	0% 0	0% 0	0% 0	0% 0
12 months subscription	0% 0	100% 1	0% 0	11% 1
Other models	60% 3	0% 0	67% 2	56% 5
Kolonne Totalt (Respondenter)	56% 5	11% 1	33% 3	-

Table C2-Q27-54.

Question 55 crossed with Q54: corr (Q55, Q54)

With your experience, what B2B app innovation type, gives the best profit? (For the App owner) Krysset med: Have your (or customers) profit per app increased or decreased last 3 years?

Nummer / Prosent (%-kolonne)	Increased	Decreased	Don't know	Rekke Totalt (Respondenter)
Radical innovations	0% 0	0% 0	0% 0	0% 0
Incremental innovations	80% 4	100% 1	33% 1	67% 6
Don't know	20% 1	0% 0	67% 2	33% 3
Kolonne Totalt (Respondenter)	56% 5	11% 1	33% 3	-

Table C2-Q55-54.

Appendix C3: Open-Ended Questions (Q: 18, 19, 22, 26, 29, 30, 45, 51, 52)

Data Variables (V) – Labeling	Related Questions & Numbering
V1: Value-centric App Innovation & business challenges	Question: **26**
V2: Value-centric App Innovation as key factor to create competitive advantage – levels & complexity	Question: **22**
V3: Radical VS. incremental app innovations	Questions: **18**, **19**
V6: Tacit knowledge & Absorptive capacity	Questions: **29**, **30**
V9: Marketing, disruption, diffusion & user adoption	Question: **45, 51, 52**

Table C3-OEQ. Open-Ended Questions (Qualitative data).

Question 18:

When does radical B2B app innovation lead to high growth/high number of user adoptions?
(Radical = new to the market/user, high degree of novelty)

Nr.	Svar
1	When marketing goes viral because of good UX
2	When a concrete purpose and need is identifyed and solved
3	When the user gets a good feeling.
4	50%
5	Dont know.
6	Solves a problem, and has a well defined purpose.
7	When users understand why they want to use this new app
8	Making use of known standardization for user interfaces. Easy access (google mail login etc.) Free trials, freemium model or other tempting business models can leverage adoptions ofc. Whitelabel options for partners. Without digging into marketing aspects, the statistics are clear, the product does not win, distribution does. Most rely on direct sales. In general, be available ofc - in the appstores and with great online marketing. Making use of existing channels and partnerships can prove to be effective in a cloud world of open APIs. Viral methods might work well for some, but we haven't seen the rapid adoption like we see in the consumer space yet.
9	when clients embrace the technology and set realistic, manageable, measurable goals.

Table C3-Q18.

Question 19:

When does incremental B2B app innovation lead to high growth/high number of user adoptions? (Incremental = up-grading or adding value to products in existing market)

Nr.	Svar
1	Don't know
2	Have no idea
3	Same as 18
4	50%
5	Dont know.
6	Fixing problems or adding features based on user feedback.
7	when there is competition.
8	You focus on the core features that the product idea solves first for the business clients. By focusing on the functionality with the highest business value first, you prove value and focus on what is more important first. It can also build external support and fans from the user base, if upcoming and wanted features are planned and communicated.
9	when clients embrace the technology and set realistic, manageable, measurable goals.

Table C3-Q19.

Question 22:

How does your team plan for balancing the level or complexity of innovative B2B app features with UI & UX?

Nr.	Svar
1	Learning from the best
2	We develop after customers needs, so this has not been a real chalenge
3	Together with a representative of the customer, interaction design, war room meetings, remove unnecessary UI elements, iterations until its perfect.
4	Lean Approach - limited functionality, measure and adapt.
5	Designers and developers plan together in early phases of the projects.
6	We use de-facto standard ways to implement most features, not so much "re-inventing the wheel" UI/UX.
7	iterative process, agile (sprints) development
8	Challenging design rounds, thorough research, drafting, feedback rounds, more than one main designer, time off - fresh eyes, stripping down/simplifying techniques and more...
9	Mock ups and working with the client as we go. As many pictures as possible.

Table C3-Q22.

Question 26:

How does your company verify that the B2B app(s) really delivers unique value for the users?

Nr.	Svar
1	Unique value is perhaps only truly verified when we work with a niche product
2	No real procedures set.
3	Early usability studies of paper prototypes, and usability studies as early and often as necessary.
4	LEAN - measure
5	.
6	Various forms of usage statistics and continuous communication with the client/customer.
7	if the users stop using a pre-existing method to perform a function. if our app is disruptive then we feel that it delivers unique value.
8	Direct client communication and received feedback, frequent competitor search and new feature development
9	ROI, customer retention, productivity & data capture, KPI's

Table C3-Q26.

Question 29:

How does your team manage tacit knowledge to create innovative apps? App development company know-how is difficult to imitate knowledge)

Nr.	Svar
1	No strategy
2	N.A
3	Intervjus, early prototyping, userstories, requirement descriptions, change management, contracts
4	No strategy
5	.
6	Usage of a well defined framework for all low-level operations.
7	reward members who produce breakthrough ideas. Documentation of thought process.
8	Collaborative/sharing sessions, wiki documentation of best practices, project reviews, open work culture, asking questions
9	We don't, it's an area we need to improve on as we grow. Sharing knowledge, transfer of skills etc. Small company of 5 so this isn't an issue at the moment.

Table C3-Q29.

Question 30:

What processes does your organization use to create competitive advantage of absorptive capacity? then assimilate it, and apply it to products

Nr.	Svar
1	No formal process
2	N.A
3	One person responsible for a field of interest. Responsible for distributing the knowledge through the company. Five whole days of the year are devoted to spreading knowledge in the whole company.
4	LEAN approach.
5	.
6	We follow various developer groups to seek out new information and always try to relate that information to our own products. If the idea is good, and relevant to us, we implement it.
7	user feedback, user requests
8	R&D/play/read time (20% copied off of Google :)), internal sharing of categorized topics, rewritten at wiki or bookmark sharing, or simply within a closed company FaceBook group. Keeping updated of relevant portals/social media posts or shared articles that is relevant for the business. Behance, design forums, app dev forums etc.
9	Working closely with the customer, understanding their business, their pains, their ambitions and how they want to evolve and how we can help deliver this via our fresh viewpoint and technical skils.

Table C3-Q30.

Question 45:

How does your company screen and monitor the existing B2B app market as part of your competitive app analysis?

Nr.	Svar
1	Following trends and interesting users on Twitter
2	Very little
3	We don't. We focus mostly on in-house business apps for companies.
4	Various statistic-tools for measuring different KPI's
5	Screening AppStore etc.
6	Our products normally does not relate to this.
7	existing players in the space, market size, cost to produce a comparable app.
8	Random research at first, and mostly included in the online marketing work afterwards.
9	We don't have the resources or time to do this at the moment.

Table C3-Q45.

Question 51:

What key BUSINESS measurements are the most important to monitor after launch? (Key Performance Indicators - KPIs)

Nummer / Prosent	Totalt
Don't know	44% 4
Name 1-3 examples of valuable KPIs:	56% 5
Totalt	100% 9

Nr.	Svar
1	Specific for each project.
2	Adoption / usage, feedback.
3	subscriptions, downloads, visits to download ratio
4	Top 3 first: a) Signup and conversation rate b) Days and visits to "purchase" c) Visitor loyalty and visitor recency Well, in general focusing on identifying success for areas where one spends the largest efforts first is important.
5	customer retention, acquisition and indirect revenue generation / savings (time, cost etc)

Table C3-Q51.

Question 52:

What key APP measurements are the most important to monitor after launch? (Key Performance Indicators - KPIs)

Nummer / Prosent	Totalt
Don't know	44% 4
Name 1-3 examples of valuable KPIs:	56% 5
Totalt	100% 9

Nr.	Svar
1	Varies for each project.
2	Bug/error checking
3	user feedback (sentiment), visits to download ratio, press /social media mentions
4	a) Usage b) Retention rate c) User experience / happiness d) Load time / app and server speeds e) Customer service / Response time (https://www.helpshift.com/))
5	Maintainability & upgrade path

Table C3-Q52.

Appendix D: Mobile App Break-Even Analysis Example

Break-Even Analysis

B2B App Example
Android Pay-Per-Download App

For the Period:	2014 (Year 1)
Selling Price (P):	$ 15,00
Break-Even Units (X):	21 112 units
Break-Even Sales (S):	$ 316 666,67

Fixed Costs

Advertising	$ 20 000,00
Accounting, Legal	$ 10 000,00
Depreciation	$ 2 000,00
Interest Expense	$ 3 000,00
Insurance	$ 2 000,00
Manufacturing	$ 56 000,00
Payroll	$ 60 000,00
Rent	$ 1 000,00
Supplies	$ 1 000,00
Taxes (real estate, etc.)	$ 25 000,00
Utilities	$ 3 000,00
Other (specify)	$ 7 000,00
Total Fixed Costs (TFC)	**$ 190 000,00**

Variable Costs

Variables Costs based on Dollar Amount per Unit

Cost of Goods Sold	$ 2,00	per unit
Direct Labor	$ 2,00	per unit
Overhead	$ 1,00	per unit
Other (specify)	$ 1,00	per unit
Sum:	$ 6,00	

Variables Costs based on Percentage

Commissions	0,00 %	per unit
Other (specify)		per unit
Sum:	0,00 %	

Total Variable Cost per Unit (V)		**$ 6,00**
Contribution Margin per unit (CM) = P - V		$ 9,00
Contribution Margin Ratio (CMR) = 1 - V / P = CM / P		60,0%

Break-Even Point

Break-Even Units (X)	X = TFC / (P - V)	**21 112 units**
Break-Even Sales (S)	S = X * P = TFC / CMR	**$ 316 666,67**

Targeted Net Income

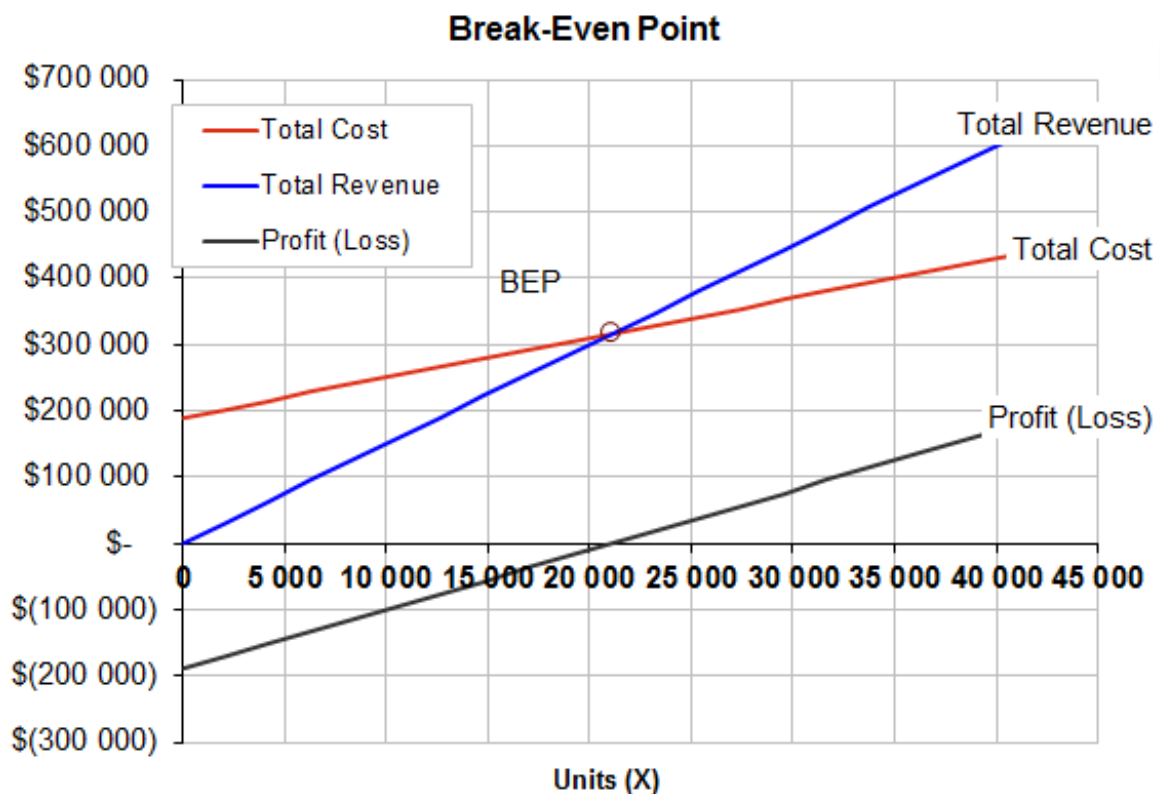|		
Targeted Net Income Before Taxes (NIBT)	$	40 000,00
Units required to reach targeted NIBT, X = (TFC + NIBT) / (P-V)		25 556 units
Sales required to reach targeted NIBT, S = (TFC + NIBT) / CMR	$	383 333,33
Rate of return on sales before taxes = NIBT / S		10,4%
Tax Rate (T)		28 %
Net Income After Taxes (NIAT) = (1-T)*NIBT	$	28 800,00
Rate of return on sales after taxes = NIAT / S		7,5%

Break-Even Point

Appendix E: Mobile App Development Cost Example

Example: DIY versus App cloud creator (MBaaS):

Advanced Business Mobile Web App – Source: http://www.kinvey.com/app-cost-estimator

Infrastructure

Infrastructure Costs	$18,000

Total cost = **$18,000**

* Cost assumption to procure and manage infastructure for your backend for one year

Frontend

User Messaging and Engagement	Days to complete		Average cost/day		
Receive Push Notifications	0	X	$365	=	$0
Generate Emails	1	X	$365	=	$365

Total feature cost = **$365**

($356 with Kinvey)

Start page	Days to complete		Average cost/day		
Splash Screen	1	X	$365	=	$365

Total feature cost = **$365**

($356 with Kinvey)

App usage tracking and performance management	Days to complete		Average cost/day		
App Usage Analytics	3	X	$365	=	$1,095
App Crash Reporting	2	X	$365	=	$730
App Performance Management	5	X	$365	=	$1,825

Total feature cost = **$3,650**

($3,560 with Kinvey)

Data Storage	Days to complete		Average cost/day		
Storing data in a new custom data store	6	X	$365	=	$2,190
Storing data in a new large file store + CDN	0	X	$365	=	$0
Advanced querying (more than CRUD)	5	X	$365	=	$1,825

Total feature cost = **$4,015**

($1,424 with Kinvey)

190

App Security and distribution	Days to complete		Average cost/day		
Encryption of data on device (client-side)	10	X	$365	=	$3,650
Encryption of data on network	0	X	$365	=	$0
Encryption of PII data in the backend data store	3	X	$365	=	$1,095
On-demand deletion of user's client-cache	2	X	$365	=	$730

Total feature cost = **$5,475**

($1,068 with Kinvey)

User Experience	Days to complete		Average cost/day		
Online/Offline Data Access	15	X	$365	=	$5,475
Network and battery optimized data syncing	10	X	$365	=	$3,650

Total feature cost = **$9,125**

($2,136 with Kinvey)

Login / User Management	Days to complete		Average cost/day		
via Username / Password	5	X	$365	=	$1,825
via LDAP	18	X	$365	=	$6,570
via Active Directory	0	X	$365	=	$0
via Facebook (OAuth)	0	X	$365	=	$0
via Twitter (OAuth)	0	X	$365	=	$0
via Google+ (OAuth)	0	X	$365	=	$0
via Linkedin (OAuth)	0	X	$365	=	$0
via other (OAuth)	0	X	$365	=	$0

Total feature cost = **$8,395**

($2,136 with Kinvey)

Access to internal enterprise data	Days to complete		Average cost/day		
SOAP Interface(s)	0	X	$365	=	$0
REST Interface(s)	0	X	$365	=	$0
SQL Data store(s)	16	X	$365	=	$5,840
Other (Enterprise message bus, custom API, etc.)	0	X	$365	=	$0

Total feature cost = **$5,840**

($712 with Kinvey)

191

Access to Cloud data from a 3rd-party SaaS	Days to complete		Average cost/day		
SOAP Interface(s)	16	X	$365	=	$5,840
REST Interface(s)	0	X	$365	=	$0

Total feature cost = **$5,840**

($712 with Kinvey)

Number of pages	Days to complete		Average cost/day		
Estimated number of pages in app	36	X	$365	=	$13,140

Total feature cost = **$13,140**

($12,816 with Kinvey)

Backend

User Management	Days to complete		Average cost/day		
Login via Username / Password	15	X	$365	=	$5,475
User auth, roles and session management	25	X	$365	=	$9,125
User-based Data ACLs, data sharing, etc.	25	X	$365	=	$9,125

Total feature cost = **$23,725**

($2,136 with Kinvey)

Data Storage	Days to complete		Average cost/day		
Custom data store to store app data	15	X	$365	=	$5,475
File Store + CDN to store/stream large files	0	X	$365	=	$0
Data warehouse to store analytics data	0	X	$365	=	$0
Data encryption	0	X	$365	=	$0
Data online/offline access	0	X	$365	=	$0

Total feature cost = **$5,475**

($356 with Kinvey)

Custom Business Logic	Days to complete		Average cost/day		
Trigger-based business logic (for e.g - for data validation)	15	X	$365	=	$5,475
"Always-running" business logic	0	X	$365	=	$0
Custom REST end points (for e.g. for mashups)	0	X	$365	=	$0
Business logic versioning	1	X	$365	=	$365
Real time location based query	0	X	$365	=	$0
Trigger-based Push Notifications	10	X	$365	=	$3,650
Trigger-based Emails	10	X	$365	=	$3,650
Trigger-based SMS	0	X	$365	=	$0

Total feature cost = **$13,140**

($2,492 with Kinvey)

Backend environment	Days to complete		Average cost/day		
Secure REST API	20	X	$365	=	$7,300
Auto-scaling / Failover	30	X	$365	=	$10,950
Data archiving	15	X	$365	=	$5,475
DoS protected	15	X	$365	=	$5,475
Backend environment install and updates	10	X	$365	=	$3,650
Identity management for backend developers	2	X	$365	=	$730
Custom web console to your backend	45	X	$365	=	$16,425

Total feature cost = **$50,005**

($0 with Kinvey)

Lifecycle management	Days to complete		Average cost/day		
API versioning	15	X	$365	=	$5,475
Backend evironment versioning (Dev / Staging / Prod)	10	X	$365	=	$3,650

Total feature cost = **$9,125**

($712 with Kinvey)

Access to internal enterprise data	Days to complete		Average cost/day		
SOAP Interface	0	X	$365	=	$0
REST Interface	0	X	$365	=	$0
SQL Data store (s)	30	X	$365	=	$10,950
Other (Enterprise message bus, custom API, etc.)	0	X	$365	=	$0

Total feature cost = **$10,950**

($8,900 with Kinvey)

Access to Cloud data from a 3rd-party SaaS	Days to complete		Average cost/day		
SOAP Interface	10	X	$365	=	$3,650
REST Interface	0	X	$365	=	$0

Total feature cost = **$3,650**

($5,340 with Kinvey)

DIY		Kinvey	
person days	personnel	person days	personnel
472	5	127	4
price		price	
$190,280		**$63,212**	