UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Co-propagation in The Diffusion of Innovation
– Patterns amongst promissory organizations

Acknowledgements

We would like to thank our supervisor Johan Magnusson at the University of Gothenburg, School of Business, Economics and Law for his invaluable inspiration, guidance, thoughts and support during this process. We would also like to thank our families and friends for their patience and support without which the production of this thesis would not have been possible.

 Thank you!

Gothenburg, January 10th 2014

_____   _____

 Fredric Travaglia   Andreas Tilgmann

Abstract

Master thesis in Business Administration and Finance Management and Organization

Supervisor: Johan Magnusson
Authors: Fredric Travaglia
Andreas Tilgmann

Title: Co-propagation in The Diffusion of Innovation
- Patterns amongst promissory organizations

Background and Problem: There are still many unexplored questions around the relationships and interactions between the parties involved in the software industry. The emergence and evolution of the industry analyst firm and its impact on the market is one such issue. It is unclear to which extent the industry analyst firms act in isolation, and to which extent interaction, co-creation and co-propagation processes form the definitions of the technological concepts.

Purpose: The purpose of this thesis study is to contribute further to the current research areas of patterns in diffusion of innovation and promissory organizations, by analysing the industry analyst firms' proprietary reports over time, through a chosen technological concept.

Limitations: The impact or relationships between customers, suppliers and the promissory organizations is not analysed as part of the diffusion of innovation process. The empirical material used is exclusively secondary data from three selected industry analyst firms, limited to a specific timeframe and technological concept for the analysis.

Method: The chosen approach for analysis is to combine qualitative deductive content analysis and synthesising content analysis of the proprietary reports from the industry analyst firms. The resulting data set is quantitatively visualized, to allow for triangulation and to identify possible patterns.

Conclusion: The analysis identifies indicators of patterns of co-propagation, where the individual industry analyst firm is affected by the analysis provided for the technological concept by its peer competitors, with regard to definitions and categorizations. The industry analysts, individually and as a group, align towards a common definition, as well as towards a similar categorization, of the technological concept.
Within their group, the industry analysts show signs of imitation and translation in the adoption pattern of new innovations, and follow the Rogers' 'Diffusion of Innovation S-curve' when forming the categorizations of a technological concept.

Suggestions for further research: Investigation of industry analyst interaction by different methods such as interviews and case studies, and application of methods used in this thesis with focus on a different technological concept, is proposed for comparison.

Keywords: diffusion of innovation co-creation co-propagation industry analyst translation SaaS Cloud IT Technology Gartner Inc., Forrester Research Inc., Radar Ecosystem Specialists

Table of Contents

1 Introduction

This chapter provides a background to the problem explored in this thesis, together with a short introduction to the relevant parties in the software industry, specifically with emphasis on the industry analyst firms, vendors and customers on the packaged software market.

1.1   Background

The interaction between parties involved in the software market yields opportunity for further research as the industry continues to grow and evolve. As established by Pollock & Williams, "the business of technological expectations has yet to be explored thoroughly by scholars .." (2010). One of the operators in the business of technological expectations, is the software industry analyst firm. The business model for an industry analyst firm is to offer access to proprietary reports containing analysis, interpretations and predictions regarding the software suppliers and packages available, to their customers.

The emergence of the technology industry analyst as a market actor is a particular area of interest in this thesis, and this has also been explored in previous research by Pollock & Williams (2010), Ask & Magnusson (2013), to name but a few. The industry analyst firms are engaged in one, or a combination of, scenarios where the industry analyst community formulates and communicates, thus creates, market opinion (Pollock & Williams, 2010). It can be assumed that there are interorganizational relationships between the industry analysts that affect how diffusion of innovation is spread, and terminology adopted, within the industry analyst community (Abrahamson, 1991).

The work initiated by Magnusson (2010), and Ask & Magnusson (2013) provides further informative insights into the role and impact of the analyst industry, defined as 'promissory organisations' by Pollock & Williams (2010).

1.2   Problem and Purpose

The role of the industry analyst firm in the overall context of diffusion of innovations, and development of technological concepts, is an area which warrants further analysis. This has been highlighted in previous research to explain the interaction between the involved parties in the packaged software market (Preda, 2005; Pollock & Williams, 2009, 2010; Magnusson, 2010; Ask & Magnusson, 2013). Specifically, the relationships and mechanisms between industry analysts in the software market are of interest.

This thesis investigates the area of industry analyst research through focusing on the industry analysts' role in the propagation of IT technologies, and the potential patterns of co-propagation involved in the diffusion of innovation processes (Rogers, 1962). With this previous research as a starting point, this thesis aims to contribute to expand the knowledge and understanding in this area through investigating patterns of interaction between industry analysts using their proprietary report material, posing the following research question:

> - How do industry analyst opinions change over time, and what potential patterns of interactions between different industry analysts can be identified?

Previous research and analysis has indicated that far from all predictions regarding the technological evolution actually become reality (Geels & Smit, 2000; Ask & Magnusson, 2013). It has also been established that the conceptualization of a specific set of features or functions in the form of an industry standard term (such as CRM) is typically changing and

evolving over time, a process referred to as 'conceptual fluidity' by Ask and Magnusson (2013). This thesis explores the predictions and analysis distributed from the industry analysts to evaluate the potential effect on the other competing firms in terms of what and how they communicate around the same technological concept.

1.3   Limitations

The empirical material used is exclusively secondary data from industry analyst firms, in the form of market analysis reports distributed to the customer networks of the industry analyst firms. The report material is limited to a specific timeframe for the analysis, ranging from 2006 to 2013. The sources are limited to three industry analyst companies; Gartner Inc. (Gartner), Forrester Research Inc. (Forrester) and Radar Ecosystems Specialists (Radar). The analysis is limited further to the use of a specific technological concept defined by the term SaaS ("Software as a Service"), and related sub-technologies, to narrow down the scope and highlight a specific area to facilitate analysis.

1.4 Disposition

Introduction
- Background
- Problem and Purpose
- Limitations
- Disposition

Previous Research
- Diffusion of Innovation
- Isomorphism, Fad and Fashion
- Translation
- Promissory Organizations

Method
- Research Approach
  - Research Process
- Quality Criteria
  - Validity
  - Reliability
  - Research Ethics
- Empirical Selection
  - SaaS
  - Gartner Hype Cycle
  - Data Collection
- Research Method Challenges
- Method of Analysis
- Input Data Parameters
- Expected Results
- Delimitations

Results
- Keyword Analysis
- Definition Analysis
- Categorization Analysis

Discussion
- Discussion
- Conclusions
- Thesis Contribution
- Implications for Research and Management
- Further Research

References
- Literature and Published Articles
- Online Resources
- Analyst Reports

Appendix
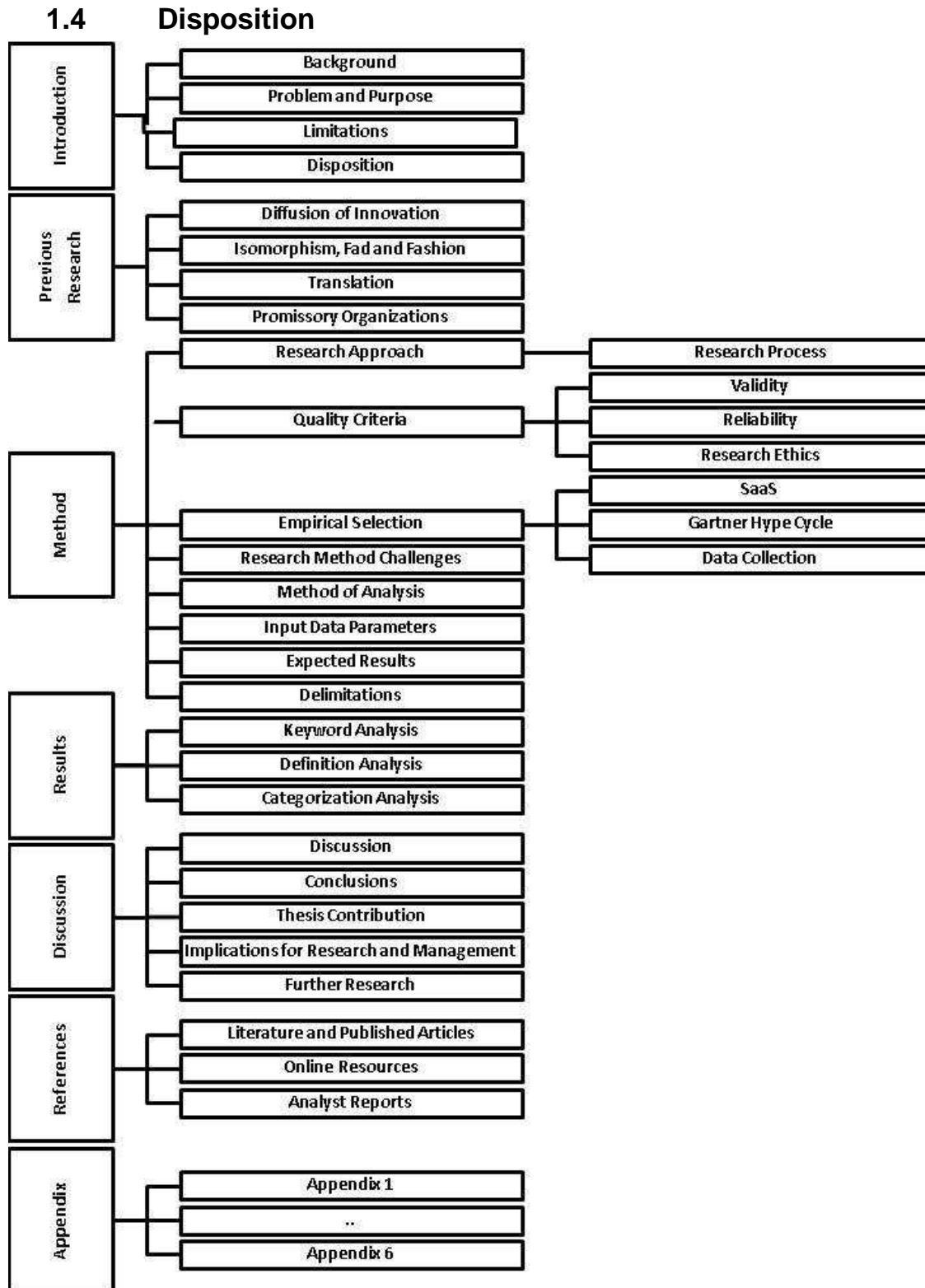- Appendix 1
- ..
- Appendix 6

Figure 1. Thesis disposition.

7

2 Previous Research

This chapter presents and explains the chosen theoretical framework in previous research covered to provide a profound basis for the study. These theories will also be discussed later in the analysis chapter in correlation to the empirical data.

2.1   Diffusion of Innovation

Innovation and diffusion of technology has characterised the modern capitalistic development after the industrialization from 1820 and onwards (Maddison, 1991). Much of the research around the notion of innovation diffusion is based on Rogers' (1962, 2003) work in which the term 'diffusion of innovation' was coined. In Rogers' work the diffusion of innovation among the adopters is the dominant, and traditional, perspective of analysis.

The figure below depicts the classic Rogers' (1962, 2003) rate of adoption S-curve overlaid with a bell-curve based division of adopter categories. According to Rogers:

> When the number of individuals adopting a new idea is plotted on a cumulative frequency basis over time, the resulting distribution is an S-shaped curve.
>
> <div align="right">(Rogers 2003, p. 23)</div>

The adopter categories as defined by Rogers are: 'Innovators'; 'Early Adopters'; 'Early Majority' and 'Laggards', in order from the first adopters of innovation to the last adopters.
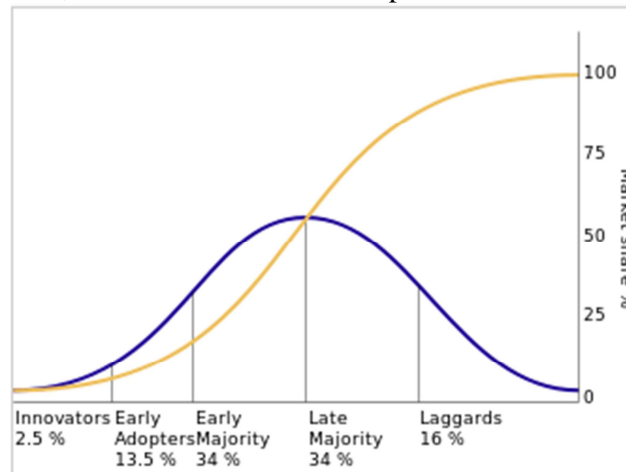

Figure 2. Rogers Diffusion of Innovation and adopter categories.

Ax & Bjornenak (2007) defines diffusion of innovation as:

> An innovation is the successful introduction of an idea or a phenomenon, perceived as new, into a given social system. It may have existed earlier in another form or in another setting, but as long as the idea is perceived as new in the group or location, it may be viewed as an innovation.
>
> <div align="right">(Ax & Bjornenak 2007, p. 358)</div>

They expand the definition by stating:

> Diffusion is the process by which an innovation is spread or disseminated. The major point of interest in diffusion theory is how specific agents adopt particular ideas or phenomena, and why they do it (or not). Diffusion theory has multidisciplinary characteristics and explores matters such as the diffusion of diseases, rumours, economic development and management accounting innovations.
>
> (Ax & Bjornenak 2007, p. 360)

Based on Johnson and Kaplan's 'Relevance Lost' idea (1987), Modell (2007) studies what makes organizations diffuse innovation and implement solutions that are not adherent to the basic idea of the concept. Ax & Bjornenak (2007) step away from the adopter perspective and develop the notion that industry analysts actively drive innovation. They identify the drivers of innovation as often being universities, consulting organizations, or the industry. The theory is that the first two are more actively communicating the concept invented due to the nature of their business where publicity drives revenue and reputation. Introducing the concept of consultants acting as 'Merchants of Meaning' Czarniawska-Joerges (1990) pointed to the consultants taking part in the diffusion of the idea, selling the idea and participating in the implementation of the idea. Magnusson (2010) then made the comparison between the consultants and the industry analysts and establishes that the roles are similar in that they provide guidelines for managers.

Ax & Bjornenak (2007) continued on the idea of how diffusion of innovations occurs by establishing two models: 'contamination diffusion'; and 'hierarchical diffusion'. Contamination diffusion takes place when the "infection" is spread by a consultant. Hierarchy diffusion takes place when innovation is first adopted by the largest and most influential business organization (Ax & Bjornenak, 2007).

The prevailing theory in the diffusion of innovation literature is, that adopters are fully rational and that their choices reflect this (the efficient-choice perspective) (Rogers, 1962). This is questioned by Abrahamson (1991) among others (Ax & Bjornenak, 2007); why are technically inefficient innovations sometimes diffused and efficient innovations sometimes rejected? By what processes and when does this occur? Abrahamson continues by presenting the fad perspective and the fashion perspective which will be described in the 'Isomorphism, Fad and Fashion' sub-chapter.

Ax & Bjornenak (2007) address the balance scorecard adoption in Sweden from the fashion perspective to put focus and explore the fashion setters on the supply side and what role they play in the diffusion of innovation. Ask & Magnusson (2013) point out that the definition never rests solely on one part, since the diffused concept never is identical to the adopted concept. This relationship can be referred to as the ownership of the definition.

2.2   Isomorphism, Fad and Fashion

The concepts of institutionalization and isomorphism are theories developed to explain the reasons why organizations within a field often become so similar to each other. Social theorists DiMaggio and Powell (1983) introduced their seminal work by asking: "...why there is such startling homogeneity of organizational forms and practices" (DiMaggio & Powell, 1983, p. 148). They state that the concept which best captures homogenization is

'isomorphism'. This is described as when facing the same conditions, interaction forces practices to become similar.

Mimicking is a key concept of the isomorphism theory. The organization that holds the highest reputation within the group - the most successful and/or legitimate organization - acts as a fashion-setter (DiMaggio & Powell, 1983). What then occurs is a homogenization among the organizations and this development is, according to DiMaggio and Powell, best explained by the concept of isomorphism, in striving to achieve increased compatibility within the environment. They describe institutionalization resulting in institutional isomorphism, which is when organizations are increasingly homogeneous and adopting rituals of conformity to wider institutions. They continue by clarifying that opposite to more forced authoritarian isomorphism is a mimic or modeling approach, which is driven by uncertainty.

> Modeling, as we use the term, is a response to uncertainty. The modeled organization may be unaware of the modeling or may have no desire to be copied; it merely serves as a convenient source of practices that the borrowing organization may use. Models may be diffused unintentionally, indirectly through employee transfer or turnover, or explicitly by organizations such as consulting firms or industry trade associations. Even innovation can be accounted for by organizational modeling.
> (DiMaggio & Powell 1983, p. 151)

Based on research on reorganization of corporations DiMaggio & Powell found that the modelling of other organizations were, in many cases, a stronger catalyst of change than the efficiencies the change in itself would bring.

By presenting numerous predictors of isomorphic change DiMaggio and Powell establish a model that can be used to assess which organizational field should be most homogeneous in process, structure and behaviour. For the purpose of this thesis hypothesis B-4 stands out: "The greater the extent to which technologies are uncertain or goals are ambiguous within a field, the greater the rate of isomorphic change." (DiMaggio & Powell, 1983, p. 156)

Abrahamson points out that perspectives, such as DiMaggio and Powell's:
> "...assume conditions of uncertainty concerning environmental forces, goals, and technical efficiency claim that under these conditions organizations will tend to imitate other organizations…".
> "According to such perspectives, organizations' decisions center less around which technology they should adopt, and more around which organization they should imitate."
> (Abrahamsson, 1991, p. 595)

In the field of management research Abrahamson describe the fashion and the fad perspective and points out the differences in the relationship between the fashion-setter and the imitators in the two theories. The fashion perspective identifies a pattern where organizations, in times of uncertainty, follow the fashion-setting organizations and imitate their standpoints and actions (Hirsch, 1972; Abrahamson, 1991; Czarniawska, 1996). So who are these fashion-setters? Several researchers have identified consultants, business media and business schools to constitute the fashion-setters (Abrahamson 1991; DiMaggio and Powell, 1983). From the fad perspective, Abrahamson (1991) explains the relationship as being within a specific group, and that the fashion-setter is one of the organizations in the group.

2.3   Translation

Rogers' (1962) groundbreaking 'diffusion of innovation' is the traditional approach when theorizing about how ideas move in time and space. Much of the translation theory is a reaction to the diffusion of innovation theory and can be traced to organizational theorists. Czarniawska and Joerges (1996) argue that the diffusion model lacks nuances due to "the rendering of the less known in terms of the more familiar" (p. 23). Instead Czarniawska and Joerges propose the idea introduced by Latour (1986) to contrast the diffusion model with the translation model. The translation model points out that objects, such as a text, can be interpreted in different ways. Latour states:

> This model of diffusion may be contrasted with another, that of the model of translation. According to the latter, the spread in time and space of anything - claims, orders, artefacts, goods - is in the hands of people; each of these people may act in many different ways, letting the token drop, or modifying it, or deflecting it, or betraying it, or adding to it, or appropriating it.
>
> (Latour 1986, p. 267)

Czarniawska & Joerges continue by emphasizing that the energy required for an idea to travel comes from people and that ideas kept locked in will not travel and diffuse. It is when ideas travel that the translation points multiply and evolution happens.

When comparing the energy required to spread an idea around the world Czarniawska and Joerges emphasize the role of rather recently introduced technologies such as mass-media. In today's world, ideas that not so long ago required a century to spread around the world can now be known to a larger audience in a matter of weeks due to information technology.

According to Czarniawska & Joerges (1996) ideas are objectified by the use of a constant definition, and by repetitive use they are turned into linguistic artefacts. The objectification develops through the stages of objective attributes to objects created. This process is supported by the use of both constant definitions and by going through the chain of translations.

Sevón (1996) questions why not all organizations end up identical. DiMaggio & Powell (1983) argue that all larger organizations are likely to look similar due to homogenization. The reason why, according to Sevón, is that the traditional perspective of diffusion, where imitation is a strict copy of the original, is seldom what occurs. Rather, imitation can be seen as a process where change and transformation is conducted in a chain of translators. Sevón continues by emphasising that "...ideas or practises do not force themselves on organizations which then have to adopt" (Sevón, 1996, p. 51).

Rogers (2003) redeveloped his notion of diffusion of innovation to acknowledge the multi directional relationship in the diffusion process. This mitigated a lot of the critique mentioned above and introduced new concepts such as 're-innovation'. Rogers likened the relationship not as a passive transfer of innovation, but rather as a transformation (adaptation versus adoption).

2.4 Promissory organizations

The chosen problem centers on the industry analyst actor in the packaged software market. The industry analyst is referred to as a specialist type of consultant (Pollock & Williams, 2010) who produces and distributes information. The importance of this specialist type of consultant for the Diffusion of Innovation processes and the rate of technology diffusion can be considered significant. According to Fichman (1999) they contribute to determine the level of resources dedicated to the maturation of a technological concept (communication, promotion, enhancements), and it was established early on (Hägerstrand, 1952; Rogers, 1962) that 'change agents' influence the speed of diffusion and technological adoption.

The role and behaviour of the industry analyst firm is described in many ways in different types of research. Wang & Ramiller (2009) propose that the industry analysts work with creating and classifying technological developments, often through branding a set of development into a concept with an accompanying definition.

Fichman (1999) describe industry analysts as propagators of technologies, concepts and frameworks, and thus as actors involved in creation and diffusion of innovations. Pollock & Williams categorize the industry analysts as 'promissory organizations' whilst at the same time establishing promissory organizations as a concept. They suggest that the industry analysts actively contribute to the shaping of the state of affairs in the affected marketplace, rather than merely describe it. They also qualify the definition of the promissory organisation as:
"an intermediary that routinely and prodigiously produces future-oriented knowledge claims" (Pollock & Williams 2010, p.532).

The emergence of artefacts and knowledge, and innovation in itself, is influenced by technological expectations (Brown et al., 2000; Swanson, Burton & Ramiller, 1997; van Lente, 1993; van Lente and Rip, 1998). The theories and the world they create are described by Callon (2007) as a socio-technical arrangement, where the agents involved in the propagation process also become associated with the creation process to some extent (Magnusson, Forth.).

The industry analyst, as an intermediary, can be seen as an important contributor in innovation as highlighted by Howells (2006). Ask & Magnusson (2013) later continued to build on the notion of 'Merchants of Meaning' (Czarniawska-Joerges, 1990) and introduced the idea of industry analysts acting as 'Merchants of Concepts' where the vendors, the consultants and the customers all participate in the creation of meaning around the concept. In further research, Magnusson proposes that innovation is a process of co-creation, taking place across three realms; the Realm of Creation, the Realm of Propagation, and the Realm of Use (Forth). Looking at these relationships, coupled with the fads and fashions mechanisms and organizational relationship theories put forward by Abrahamsson (1991), it can be stated that there are interorganizational relationships between the industry analysts that affect how diffusion of innovation is spread, and terminology adopted, within the industry analyst community.

3 Method

This chapter covers the selected research approach, the research method and a description of how the empirical data was collected. Sub-chapters include discussion on validity, reliability and the authors' expectations on results of the study.

3.1 Research approach

> The ideal way to study propagating institutions is to analyze several technologies over time, comparing the effects of these institutions on unfolding diffusion processes.
>
> (Fichman, 1999, p.12)

Inspired by Fichman (1999), the ambition of this thesis was to analyse a chosen technological concept as it was presented, over time, by the subject of interest - the industry analyst firm, a promissory organization (Pollock & Williams, 2010).

In order to make progress towards a conclusion, a systematic literature study of a wide range of industry analyst reports was conducted. Industry analyst reports from a delimited technological focus area (SaaS) were reviewed and analysed. The reports were obtained through accessing the online database archives from each of the three industry analyst firms, downloading the relevant material for the chosen timeframe and the specified technological focus area (SaaS).

To approach the problem, this thesis applied well-known methods from the social sciences area; deductive content analysis and quantitative content analysis using the empirical material gathered from the industry analyst firms. Content analysis is a known research method for analysing documents through systematically describing and quantifying phenomena (Krippendorff, 1980; Cole, 1988; Downe-Wamboldt, 1992; Sandelowski, 1995). A deductive approach is useful when the aim is to compare categories at different time periods. Through this research method, large amounts of text can be reduced by identifying keywords, distilling the material into fewer content related categories (Cavanagh, 1997) with the purpose of providing knowledge and new insights (Krippendorff, 1980). One of the distinguishing advantages of this method, making it ideal from this thesis point of view, is that "large volumes of textual data and different textual sources can be dealt with and used in corroborating evidence" (Elo & Kyngäs, 2007. p 114).

With the initial analysis available, a secondary analysis was conducted through a quantitative visualization of the content analysis material. The use of qualitative material in secondary analysis, aggregating the result to identify patterns, is commonly referred to as synthesising research (Jick, 1979; Kirk and Miller, 1986). Although the use of industry analyst report material is uncommon in research of this type, there are previous examples from which inspiration and knowledge has been drawn (e.g., O'Leary, 2009; Magnusson, 2010; Pollock & Williams, 2010; Ask & Magnusson, 2013).

The utilization of several methods to study the same construct was applied in this thesis. The analysis and conclusions were based on a triangulation model as described by Jick (1979). Triangulation is useful when cross validating several distinct methods such as qualitative and quantitative methods. The goal of this thesis was to reach what Jick describes as (to):

> ...capture a more complete, holistic, and contextual portrayal of the unit(s) under study.

<div align="right">(Jick 1979, p. 603)</div>

3.2 Research process

The keywords were established through reviewing the industry analyst report material and the information structures designed by the industry analyst sources, within their proprietary database systems.

The categories for the content analysis were devised specifically for the purpose of this thesis using a top-down synthesising approach. The value statements extracted from the report material were grouped and associated with the static set of underlying criteria. The resulting average evaluation values were plotted graphically, by industry analyst, and compared over time, to establish whether or not a pattern could be identified.

Criticism against the deductive approach centers around the fact that prior researchers in the field have already established a definition of what is relevant, limiting the perspective in further research pursued with this method. There is also a risk of bias where the interpretation of the data collected confirms the researchers own view on the subject (Jacobsen, 2002).

3.2.1 Quality Criteria

To ascertain a thorough and rigorous scientific approach in the investigation of the problem, validity and reliability need to be considered. The definitions for validity, reliability, and the related methods to reach proper scientific rigor differs for qualitative and quantitative research. As a qualitative deductive content analysis is applied as the main approach in this thesis, whilst a quantitative visualization is applied for analysis and triangulation purposes, the definitions for quantitative validity and reliability are omitted.

3.2.1.1 Validity

Validity refers to the question whether or not the appropriate theoretical perspective is applied to investigate the problem, and if the resulting instrument of measure (method) used in the analysis of the empirical material is appropriate. Validity is often described as correspondence between theoretical definition and operational indicator, or absence of systematic errors between the two. (Esaiasson P., Gilljam M., Oscarsson H. & Wängnerud L. 2012). In qualitative research, the authors' view of the research validity and the choice of paradigm assumption affect the validity of the study in itself.

In this thesis, validity is achieved by describing the process of empirical selection, data collection and analysis, and the authors' thought process and views in detail. Further, the application of a synthesising research method (Jick, 1979; Kirk & Miller, 1986) allows triangulation for the purpose of the analysis as well as for improved validity.

3.2.1.2 Reliability

Reliability refers to the question whether or not the measurements, results, have been obtained in a consistent way, and that there are no errors resulting from the data collection process. A lack of reliability is primarily caused by random errors or mistakes in the data collection and processing stages. (Esaiasson P., Gilljam M., Oscarsson H. & Wängnerud L. 2012). In qualitative research, 'dependability' is a concept which has been developed as the corresponding notion to that of 'reliability' in quantitative research. (Lincoln & Guba 1985, p. 300)

In this thesis, reliability is achieved through demonstrating dependability in the authors' awareness, the data collection and analysis processes, and steps to ensure repeatability and consistent results. The authors' have cross-checked and re-tested data collection and analysis during the completion of the thesis, similar to the quantitative Test-Retest method, without apparent sources for errors. The use of secondary data sources minimises the risk for data source errors as they remain static and unchanging. A personal inventory was made by both authors and discussed for the purpose of preventing any individual or common preconceptions, pre-understanding or experiences from subjectively influencing the analysis process. Both authors have extensive experience (15+ years) from the IT consultancy industry and have been involved with industry analyst material prior to the work with this thesis. The authors' previous experience from the field of IT and industry analysts, coupled with the extensive experience and acumen of the supervisor contributes to the dependability.

3.2.2 Research ethics

To the best of our knowledge and ability, we have tried to act ethically responsible in producing this thesis. Our aim and ambition has consistently been to correctly represent the works and views of previous researchers without falsifying, copying or misinterpreting their work. Through our meticulous work with references, we avoid taking any undue credit for previous research or insights upon which we build our analysis. Due to the nature of the proprietary materials used as input, and the restricted channels we have been privileged to access for our research, we are forced to restrict part of the materials for publication, making some of the collected data unavailable to the public.

3.2.3 Empirical selection

Following Fichman (1999), this thesis studied a specific technology and followed it over several years. The empirical selection consisted of a number of standardised reports offered proprietarily by a selection of industry analyst firms. Fichman terms this approach "macro diffusion studies" (Fichman, 1992, p.196), as this thesis tries to characterise the rate and pattern of adoption of a technology across a community, in this case - the industry analysts themselves. A specific concept, terminology, was selected to limit the study to a specific period of time during which the concept in question has been established and matured as a technological commodity. In the materials, this maturation process is often referred to as following a (Gartner) Hype Cycle. As Gartner is the largest and most influential player in the industry analyst market (Burks, 2006; Firth & Swanson, 2002), it makes their model and material a dominating industry standard view of the evolution and diffusion of technological concepts. This is further explained in the 'Gartner Hype Cycle' chapter.

The selection of industry analyst report sources has been driven by two main factors. First, access and availability - the industry analyst reports is highly proprietary material and both hard and costly to access for research purposes. The relationship between the University of

Gothenburg and the leading industry analyst company, Gartner enabled access to their report material. Access to two additional industry analyst firms through professional channels has also been obtained to further widen the data set. Second, contrast and positioning - with access to the leading industry analyst company, it made logical sense to seek out the main competitor as they would be most likely to publish contrarian views and analysis of the marketplace. The main competitor has been identified as Forrester, based on market visibility, customer base and turnover. Along similar lines of reasoning, with access to the report materials from the two main global competitors in the market, it made sense to seek out a local, smaller actor. For this thesis, the industry analyst company Radar was selected as a third industry analyst source.

3.2.3.1 SaaS

> Software as a service (SaaS) is an application service available uniformly to all qualified subscribers. The application software is owned, delivered and managed by one or more providers. A SaaS service subscriber is exposed only to the application-level functionality, configuration and other application tooling, and does not monitor, manage or control the underlying infrastructure (including network, servers, operating systems, storage, databases or application platform services).
>
> (Desisto, R.P. 2013, p. 3)

SaaS (Software as a Service) is a term which includes several technologies. The underpinning technologies and concepts within SaaS, and what is now commonly referred to as Cloud services, date back to the 1960's if referring to centralized computing resources and simple terminal to mainframe solutions. In the mid-2000's XaaS and Cloud terminology was reconceptualised and propagated throughout the industry.

For this thesis SaaS was chosen as technological concept and designated as a reference point for the analysis of the convergence, communication, and behaviour between the industry analysts. SaaS is a good indicator to use since it was rather recently introduced as a term (SIIA, 2001). Additional to this there are several indicators pointing to ongoing diffusion and translation related to SaaS technologies of on-demand-software distributed over a network. Synonyms and sub-technologies used by the industry analysts were included and those not used by the industry analysts were left out.

SaaS is a common delivery model for many business applications, such as: accounting, CAD software, collaboration, content management (CM), customer relationship management (CRM), DBMS software, Development software, enterprise resource planning (ERP), human resource management (HRM), invoicing, management information systems (MIS), Management software, Office & Messaging software and service desk management. SaaS is considered part of the cloud computing umbrella concept, along with: Backend as a service (BaaS), Desktop as a service (DaaS), Information Technology management as a service (ITMaaS), Infrastructure as a service (IaaS) and Platform as a service (PaaS).

3.2.3.2 Gartner Hype Cycle

With Gartner as the leading industry analyst firm on the market (Burks, 2006; Firth & Swanson, 2002), and one of the sources for this thesis, it is warranted to introduce further background on one of the main models for communication used by the Gartner; The Gartner Hype Cycle. The Gartner Hype Cycle is an industry concept used as a yardstick to indicate the relationship between defined concepts and reality in terms of usability and utility. The Gartner Hype Cycle model is a proprietary means for communication and categorization of technological concepts. Gartner first introduced this research methodology in 1995 and have continuously reported their market view on this presentation format (amongst others). The Gartner Hype Cycle has been explained (Fenn, 2007; Fenn & Raskino, 2013) and analysed (Burks, 2006) extensively in previous research by others.
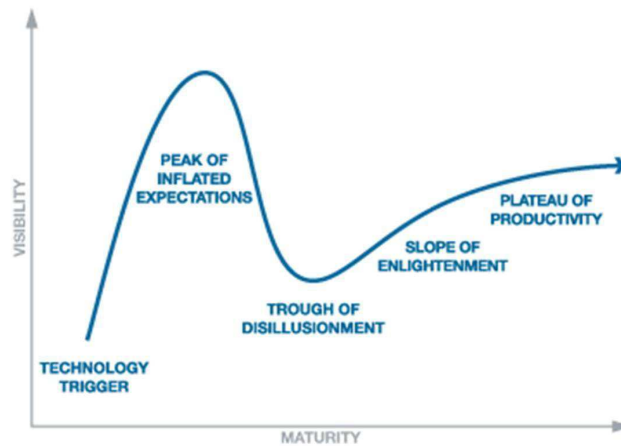

Figure 3. Gartner Hype Cycle.

According to Gartner (2013);

> Gartner's Hype Cycle characterizes the typical progression of an emerging technology, from overenthusiasm through a period of disillusionment to an eventual understanding of the technology's relevance and role in a market or domain.
>
> (Fenn, J., Raskino, M. 2013, p.4)

The model wasn't developed through scientific research, but rather as a marketing tool. However, it bears significant resemblance to the staged S-shaped curves (logarithmic function) referred to in e.g. Diffusion of Innovations theory (Rogers, 2003) and the Bass Diffusion Model (Bass, 1969). Borup, Brown, Konrad & van Lente (2006) describe it as a tool to illustrate temporal variability in expectations, and to interpret socio-technical change. Geels & Smit (2000) refer to the hype of concepts as overly optimistic or exaggerated in order to attract attention from financial sponsors. This is seconded in research by Borup, Brown, Konrad & van Lente (2006) which suggests that the gap between reality and the initially set expectations constitute a risk to reputation and credibility of both fields of innovation as well as actors.

The model is criticized by Borup, Brown, Konrad & van Lente (2006) amongst others as it is seen to be too simplistic and general in its representation of reality and expectations present in technological and social change.

3.2.4   Data collection

For this study, the empirical data has been compiled through accessing a set of analysis reports compiled by different industry analyst firms. The reports were queried and identified in each industry analyst database archive using keyword and category-based searches with 'SaaS', 'SaaS adoption', 'Cloud' and 'Software as a Service' to limit the search results. No specific limitations were applied with regard to publication date, as the technological concept is relatively new from a marketing and keyword standpoint. This resulted in a data set with reports ranging from 2006 to 2013. All reports in the search result were downloaded and reviewed for relevance. The reports found to be relevant for this study were moved to a separate location for further analysis. All report material used as input is listed as references in a separate chapter in this thesis. Of the total of 58 retrieved industry analyst documents and reports, 25 were included in the in-depth analysis.

3.3   Research method challenges

The chosen research method is based on secondary sources in the form of reports. These reports often assume the reader to have significant knowledge of the subject and to be lacking time to study more elaborate reports. Due to this the reports are short and very straight forward with the risk of leaving messages not fully explained and thereby making it harder to interpret correctly.

The limitation of only three industry analyst firms as sources can also be identified as a challenge. Two of the industry analysts are the dominant players in the industry offering complete reports while the third is a smaller local company lacking yearly reports covering the chosen analysis perspective (SaaS).

A third limitation is the proprietary nature of the industry analyst reports. University of Gothenburg had a research license (expired December 31, 2013) for one of the major industry analysts (Gartner), but not for the two other industry analysts covered in this thesis. Through professional channels the authors have accessed reports from the other two industry analysts. Ask & Magnusson (2013) identified the access limitations of such proprietary material as the main obstacle when conducting research on this type of empirical material. For reasons mentioned it can prove to be a challenge for replication or continued research based on a similar source selection.

3.4   Method of Analysis

The analysis aimed to identify how industry analyst opinions change over time, and potential patterns of interactions between industry analysts. To analyse the chosen problem, a theoretical framework to explain the mechanisms in play needs to be established, and subsequently applied in the analysis and discussion of the results of the analysis. The theoretical framework from the preceding chapter 'Previous Research' was applied on the results from the quantitative visualization of the qualitative deductive content analysis to support interpretation, further discussion and conclusions to provide an answer to the research question.

Diffusion of Innovation was identified as a central part of the theoretical framework for this thesis as it contributes to explain the mechanism of innovation and the evolution of technology concept used as an artefact in this study.

Isomorphism, Fashion and Fad are all part of the theoretical framework to explain why organizations choose to adopt or reject innovations and how the interorganizational relationship between the industry analysts functions.

Translation was chosen as a theory since it offers explanations to why not all organizations adopt ideas and practices identically through diffusion of innovation. The theory also develops what part definitions play in translations and how they are effectively developed.

Promissory Organizations is a key theory used to describe the background of the industry analysts. By establishing the role of the industry analysts in the marketplace the thesis study subject is well grounded and further theories can explain the actions and patterns observed.
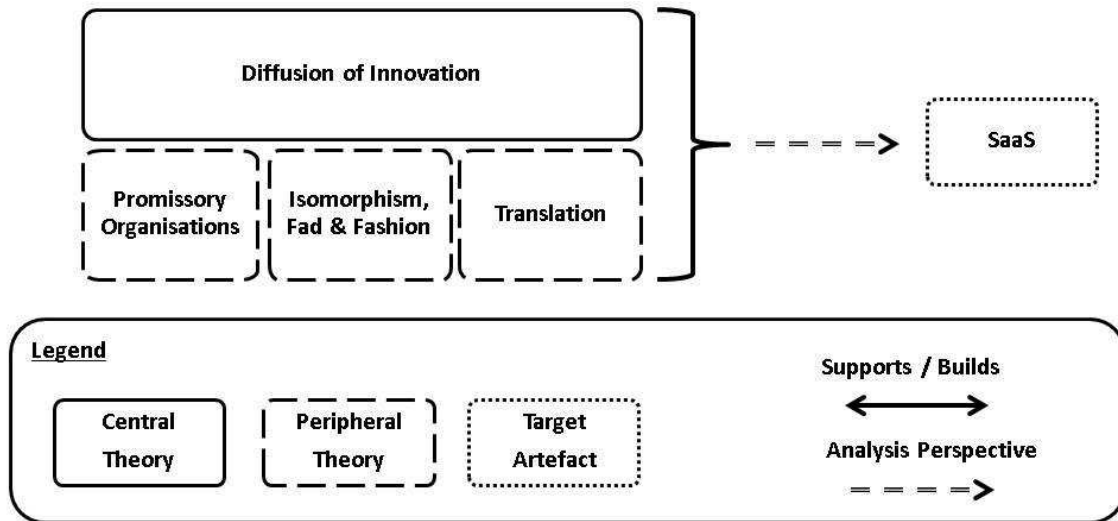

Figure 4. Previous Research applied in Analysis.

The analysis has focused on the definition and categorization of the chosen key technological concept for the study (SaaS). This was investigated through three different components of the report material; Technology Keywords, Technology Definitions, and Technology Categorization.

3.4.1   Keyword Analysis

The keyword analysis was conducted through five distinct steps. First, the empirical data was retrieved by querying for and obtaining the reports published by the industry analyst sources. SaaS was applied as a keyword in the search process, and for each industry analyst individually the reports selected for the analysis had to be published in a consistent comparable format for the selected timeframe for the study. Second, the reports were scanned for keywords categorized as technological synonyms or closely related sub-technologies to the SaaS concept, from the definitions of the term. The final list of keywords was then established based on this evaluation. Third, all the reports were analysed for the keyword recurrence in each report. Fourth, the keyword recurrence data was entered into a spreadsheet for further analysis and visualization. Last, the data and the graphs were analysed according to the steps outlined in the analysis chapter.

3.4.2   Definition Analysis

The definition analysis was conducted through four distinct steps. First, the empirical data was retrieved by querying for and obtaining the reports published by the industry analyst sources. SaaS was applied as a keyword in the search process. Second, the reports were analysed and scanned for SaaS definitions, which were extracted from the report material. Third, the extracted data on SaaS definitions was entered into a spreadsheet for further analysis and visualization. Last, the data and the graphs were analysed according to the steps outlined in the analysis chapter.

3.4.3   Categorization Analysis

The content of the industry analyst reports was analysed through a deductive content analysis method (Krippendorff, 1980). The reports were studied to provide a thorough understanding of the contents. Statements relevant for the study, categorization or evaluation of the technology and key component technologies included in its definition, were then extracted from the reports, and compiled in a separate document in order to enable further analysis. The statements were condensed to shorter keyword units, where the essence of the evaluation from the report was still evident. The keyword units were then abstracted into five enumerated categories. The categories were considered to be internally homogenous and externally heterogeneous. No data for the purpose of the analysis was deemed to fall outside of the established categories, or into several categories. The purpose with the enumerated categories was to group the keyword units with equivalent meaning and enable a visual representation of the report material to identify trends, patterns or tendencies of alignment.

3.4.4   Input data parameters

- Timeframe (2006-2013)
- Secondary data from Gartner Inc., Forrester Research Inc. and Radar Ecosystems Specialists was used.
- The scope was limited to the use of the term SaaS. Terms with similar meaning (e.g. ASP, SEAS, and Cloud computing) were only used for reference and to point out tendencies of diffusion and translation.
- In the keyword analysis one report per year was used to ascertain that only reports with a consistent format were included, as these are only published yearly.

3.5   Expected results

A degree of fluidity in the definition and meaning of the concept over time is expected. This is expected to contribute to alignment between the industry analysts, which in itself will be an indication of interest for the cross-industry analyst comparison. The positioning of the concept over time will likely follow the Gartner Hype Cycle curve, and what at an early stage will have been bleeding edge state of the art technology will towards the present point in time become commoditized and an industry standard 'must-have'.

Intuitively, there should be a pattern to the positioning of the concept between the industry analysts, where the market leader is likely to drive and progress the established 'truth' whilst the competitors will follow their lead. It is unlikely that extreme differences in opinion and predictions are published, even though such faux pas occur. In short, a 'Simon says ..'-effect within the industry analyst community is expected, where to some degree the market leader drives the definition of the established consensus, and thus co-creates reality in terms of what the customers want (believe to be important) and what the suppliers try to deliver.

The industry analyst firms, promissory organizations, are expected to be involved in the co-creation process of the requirements in the marketplace and interact with each other, customers and suppliers to contribute to the articulation of concepts and artefacts.

3.6　　Delimitations

This thesis will not attempt to analyse the interaction or relationships between customers, suppliers and the industry analysts. Previous research indicates that there are close connections between all actors, that they interact with and influence each other, and that all contribute to the co-creation process of establishing technological concepts and the diffusion of innovations in the market (Howells, 2006; Magnusson, Forth.). However, the focus of this thesis is the interaction between the industry analysts, as promissory organizations.

This thesis is exclusively based on the review and analysis of the proprietary report material obtained from the industry analyst firms, hence other possible investigative approaches such as interviews with industry analyst firm employees, case studies etc. are omitted.

4 Results

This chapter presents the findings from the qualitative deductive content analysis of the empirical material, the quantitative visualization, and an initial discussion and reflections - with the research question in mind - on how the analysis output corresponds to and/or differs from the principles in the theoretical framework.

4.1 Keyword Analysis

The first stage in the analysis was performed to establish whether or not there are patterns of interaction in what the industry analysts communicate in terms of their use of synonymous keywords related to the technological concept.

Keyword Analysis Execution

The selected macro diffusion research method is a combination of quantitative content analysis and synthesising content analysis of the report material from the industry analyst firms. The resulting data set is then mapped in a graph with evaluation category by industry analyst over time, to identify possible patterns or tendencies of alignment.

The following steps were taken as part of the keyword analysis:
1. The empirical data was collected by selecting SaaS reports published by the three industry analysts selected. For each industry analyst the reports had to be published in a as consistent format as possible for the timeframe of the study. This requirement excluded reports by Radar that did not qualify since they did not publish reports in a consistent format and did not cover more than two years out of the studied time frame.
2. The reports were studied for keywords categorized as technological synonyms or closely related sub-technologies to the SaaS concept from the definitions of the term. The final list of keywords was established.
3. All the reports were scanned for the number of times the keyword was used in each report.
4. The data was entered into a spreadsheet and normalized by how many pages the report contained. (Appendix; 'Gartner Keyword Data' and 'Forrester Keyword Data')
5. The data and the graphs were analysed and presented in this chapter.

Keyword Analysis Results

The graphs present a pattern of convergence over time where the main technologies develop in the same direction whilst sub-technologies are introduced and frequently abandoned. This points to a pattern of convergence around the main technological concepts. Contradicting a strive for consensus are the signs of translation of the innovation, rather than a diffusion of the innovation by imitation (Czarniawska & Joerges, 1996; Latour, 1986). This can be detected in the fact that Forrester is not completely adapting to Gartner's presentation of the technologies and thereby avoiding homogenization (DiMaggio & Powell, 1983). The selective market adoption and the ongoing translation contribute to the evolution, and the maturing definition of the concepts. Gartner as the largest industry analyst on the market took on a leadership role, acting as merchant of meaning (Czarniawska-Joerges, 1990), by introducing terminology and sub-technologies, and by phasing out terminology. The pattern of technology introduction can be a signs of ownership of the definitions indicated by Gartner's lead on introducing technological concepts.

The interorganizational relationship among the industry analysts can best be explained with theories such as the fad perspective, isomorphism and legitimization (Abrahamson, 1991),

where Gartner is the leader and Forrester is the follower. The pattern of delay in Forrester's adoption of the technologies could be an indicator of this particular relationship. Most significant was the introduction of Forrester's use of the term *cloud* which took place one year after Gartner introduced it and thereafter followed a similar growth pattern. This can be interpreted as an indication of a fad perspective but signs of isomorphism are more unclear when studying the data (Abrahamson, 1991; DiMaggio & Powell, 1983).

The first graph presents Gartner's keyword patterns over the timeframe of the study. SaaS is naturally used very frequently being the subject of the report, while most of the other terms are used sparsely in the report. The use of the term 'Cloud' increases from very low levels and by 2009 it has a significant usage. Gartner also presented terms such as 'SEAS', 'ASP', and later 'Private SaaS' and 'Community SaaS', but none of these terms were used to a larger extent in the reports. 'SEAS' and 'ASP' were initially used and later almost totally abandoned in the context of SaaS. The opposite applies for 'Private Cloud' and 'Public Cloud', introduced in 2009 and 2010 respectively These keywords grew steadily, albeit from low levels, between 2009-2013. 'Private SaaS' and 'Community SaaS' were first introduced in the 2013 report.
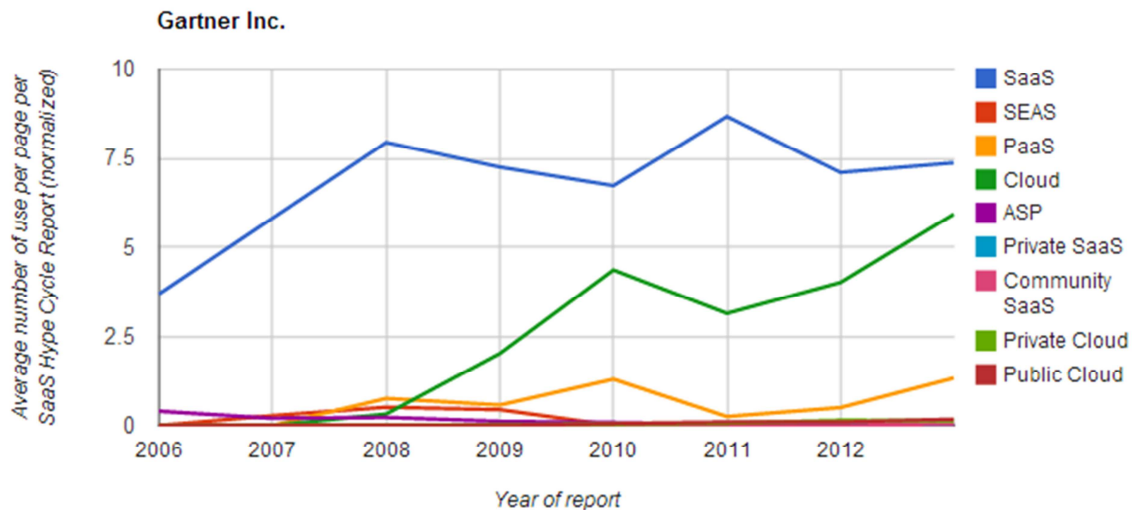

Figure 5. Gartner keyword patterns. See Appendix 7.3 for data.

The Forrester keyword patterns graph shows that the term SaaS is, as expected, frequently used in the reports. The 'Cloud' term is introduced in 2010 and has a strong growth over the study period. Besides 'PaaS', which is sparsely used 2010-2011, none of the synonymous sub-technologies are used at all until 2013 when 'Public Cloud' got a strong introduction.

The Forrester report format is far less elaborate text wise compared to Gartner. The normalization compensates for this and makes the graphs comparable. For the 2006 - 2008 and 2012 reports Forrester decided to present significantly more graphs compared to other years. This explains primarily the SaaS terms growth and decline pattern.
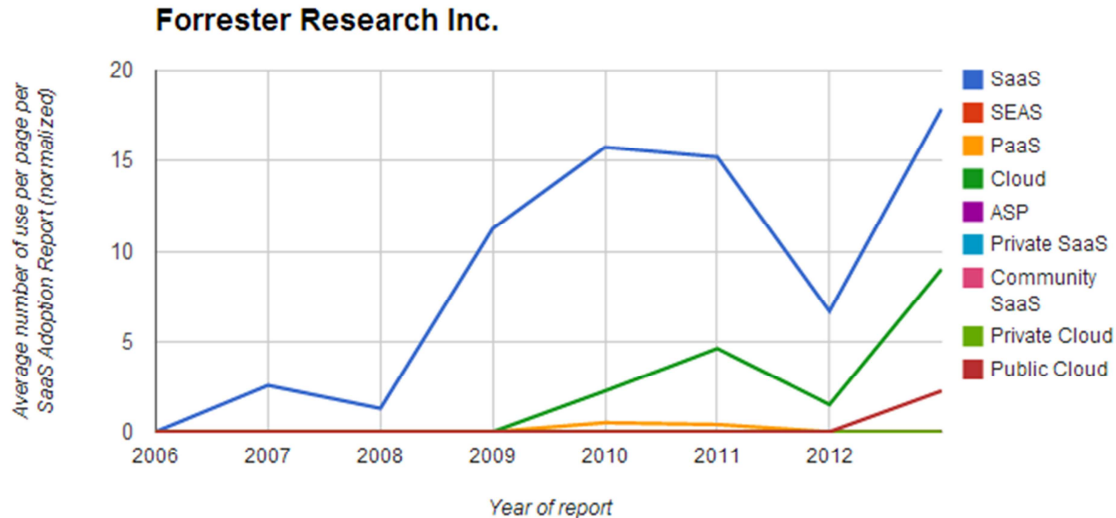
Figure 6. Forrester keyword patterns. See Appendix 7.4 for data.

Comparing the reports from the two industry analysts, Gartner presents nine sub-technology concepts while Forrester presents four. Gartner presents two of the concepts (SaaS and ASP) in the first report (2006) and the other seven are introduced later during the time frame. Forrester's first report (2007) contains one technology (SaaS) with the additional sub-technologies introduced later. Gartner was consistently the first industry analyst to introduce new technologies in the comparison. Once introduced as a concept among the group of industry analysts, Forrester adopts the technological concept within two years for 'PaaS' and 'Cloud', whilst within three years for 'Public Cloud'. Forrester retires 'PaaS' after two years in 2011, while Gartner continues to refer to the 'PaaS' within the time frame for the study.

4.2   Definition Analysis

The second stage in the analysis was performed to establish whether or not there are patterns of interaction in what the industry analysts communicate in terms of their definition of the technological concept.

Definition Analysis Execution
The selected macro diffusion research method is a combination of quantitative content analysis and synthesising content analysis of the report material from the industry analyst firms.

The following steps were taken as part of the definition convergence analysis:
1. The empirical data was collected by selecting SaaS reports published by the three industry analysts selected. The qualifying condition was that the reports had to contain a clearly stated definition of the concept SaaS to be eligible. This requirement excluded all of Forrester's reports as they lacked stated definitions. Gartner was the only industry analyst with material covering all years of the studied time frame. Radar first started presenting definitions in 2013.
2. All the SaaS definitions were highlighted and extracted to a spreadsheet for further analysis. (Appendix; 'Gartner SaaS Definitions', 'Radar SaaS Definitions').
3. The data was analysed with a quantitative visualization method, and interpreted with the results presented in this chapter.

Definition Analysis Results
Gartner is the only industry analyst that consistently formally defined SaaS in each of their reports. Forrester did not define SaaS in any of the reports while Radar defined SaaS in two reports from 2013. Hence, the comparison of the development of the definition of SaaS is limited to Gartner and Radar reports.

Gartner have, by publishing a yearly SaaS report in a consistent format, taken a leadership role in that they have accepted the ownership of the definition. Among the industry analysts they are the drivers of development of the definition with sub-technologies being added and removed over time. This can be interpreted as a hierarchical diffusion (Ax & Bjornenak, 2007 which well matches the observed leadership of the diffusion and translation process described in the keyword analysis section above.

Between 2006 and 2012 there was little overall development in the SaaS definition in the Gartner reports. Much of the focus was on the distribution model, the licensing model and what SaaS is not. By striving to use a consistent and clear definition of the term which was often repeated Gartner showed a will to mature and objectify the technology and thereby create what Czarniawska & Joerges (1996) call a 'linguistic artefact'. With an unchallenged leadership position on the international industry analyst market, Gartner had significant freedoms to develop the term and displayed a clear intention of doing so. Some examples of the diffusion of innovation (Rogers, 1962) in the Gartner reports are that in the 2007 report the term 'SEAS' was introduced and defined but it was not defined in the 2008 and 2009 reports despite that the term ('SEAS' and 'SEAP') was used in the two reports. The term was not defined or used on the reports after 2009. Neither was it ever defined or used by any of the other industry analysts (see keyword analysis section for details). Besides the above mentioned example Gartner's SaaS definition was almost identical, word by word, until 2013 when it was rewritten.

When rewritten in 2013 the definition of SaaS underwent expansion and increased in granularity. Two new concepts were introduced; 'Private SaaS' and 'Community SaaS', which were classified as varieties of the SaaS concept. This brings us to one of the big changes in the 2013 report; the requirement for the software to be remotely distributed was toned down for SaaS in general and specifically for the two newly introduced concepts. Private and Community SaaS could be owned, managed and operated by the organization which totally contradicts the 2006-2012 requirements that SaaS solutions had to be remotely distributed and could not be an on-premises installation utilizing the customer's infrastructure. This is a radical change and can be interpreted as an attempt by Gartner to further diffuse the innovation through a maturity process in which sub-technologies are created that relate to the main technology without being bound by the overall characteristics of the concept.

Over time the SaaS definition is evolving and maturing which well matches the theory. Outside the designated definition format the report contains a slightly changing vocabulary of synonyms that could be considered part of a wider definition. For the purpose of clarity this is analysed this in the keyword section above rather than included here.

Studying Radars definition of SaaS from their 2013 reports it was discovered that the payment model is not mentioned and that most of the focus is on the distribution model and where SaaS belongs in the cloud architecture. The uniformness of the application distributed is clearly defined by describing that the customer can expect very limited configuration capabilities and minimal control and influence on the infrastructure utilized on the application side.

Considering that Gartner is the dominant industry analyst on the market the definition of SaaS could be assumed to be followed by the other industry analysts and therefore creating a trend in alignment of the definition over time. During the studied time frame the observed diffusion and translation (Czarniawska & Joerges, 1996; Latour, 1986) is obvious even with the limited source material studied. Besides the payment model Radar's 2013 definition is rather well aligned with Gartner's 2012 definition. The above described additions by Gartner in their 2013 report quite drastically expanded the SaaS definition. This is a sign of a unidirectional communication that can be confirmed by analysis of the 2014 reports once published. The inter-organizational relationship supports the existence of a fad perspective (Abrahamson, 1991) which explains the relationship in focus as being within a specific group and that the fashion-setter is one of the organizations in the group - which in this study corresponds to Gartner.

4.3   Categorization Analysis

The third stage in the analysis was performed to establish whether or not there are patterns of interaction in what the industry analysts communicate in terms of their categorization of the technological concept.

Categorization Analysis Execution
The analysis combines deductive content analysis and synthesising content analysis of the report material from the industry analyst firms. The resulting data set is then mapped in a graph with evaluation category by industry analyst over time, to identify possible patterns or tendencies of alignment.

In order to map the industry analyst evaluation to a category, the following steps have been taken:
1. Identify all reports from each industry analyst firm containing the chosen key concept (SaaS).
2. Identify and extract key value directing statements from each report associated with the key concept.
3. Identify and extract keywords.
4. Classify keyword valuation and reference to adoption according to criteria and scale.

The thesis-specific criteria to categorize the report evaluations into enumerated groups (#) are, for the purpose of this analysis, defined as follows:

#	Label	Technological Concept Reference evaluation	Adoption Rate on Local or Global Market
1	Existing	The report mentions the concept, or the functional equivalent to the technology.	Acknowledged, referenced, without further indications on use or adoption.
2	Negative	Diminutive reference used	Insignificant- or lacking indication of adoption rate
3	Blended (-)	Neutral or Diminutive reference used	Recognized use and adoption rate indicated
4	Blended (+)	Neutral or Augmentative reference used	Established use and positive adoption rate indicated
5	Positive	Augmentative reference used	Adoption rate negligible or omitted as technology assumed ubiquitous (commoditised)

The details of the extraction, evaluation and categorization of the industry analyst report material is presented in the Appendix 'Categorization Analysis'.

Categorization Analysis Results
There is a clear trend emerging in the content analysis of the industry analyst reports in terms of the categorization of SaaS as a technological concept. Comparing the data from early reports with recent samples, across industry analyst firms or geographies indicated in the reports, a maturing technology with wider adoption and evermore positive and reinforcing descriptions can be distinguished. This corresponds well with the Diffusion of Innovation model put forward by Rogers (1962).
Similarly, at each point in time, comparing the industry analyst standpoint across industry analyst sources a fairly uniform evaluation and categorization of SaaS as a technological concept is communicated. If there are deviations, the material and analysis indicate that they are temporary and that discrepancies are aligned fairly quickly. The lack of contradictory views on the technology maturation and market adoption can be interpreted as a sign of isomorphism (Abrahamson, 1991) within the industry analyst community where the market leading organization is the fashion-setter, taking the leadership in and ownership of how the technological concepts are portrayed and positioned.

The graphical analysis illustrates a convergence towards a consensus between the categorization applied by the different industry analysts. No contrarian evaluations or categorizations can be distinguished from the materials analysed.

Categorization Comparison 1

The first graph illustrates the average rating of the evaluation of SaaS as a technology over time, with all three industry analyst firms material represented. The similarities in categorization between the market leader and the contending competitor can easily be distinguished. With material available from the third industry analyst (Analyst C) for plotting in the graph, there is a slight deviation in categorization of the technology communicated towards the market. Looking to the source material for further guidance on underlying causes, local market conditions and industry analyst-specific categorization format specifically for their first year of reporting contributes to the difference versus the other industry analysts. As indicated by the graph, Analyst C aligns rapidly towards what can be perceived as market consensus.
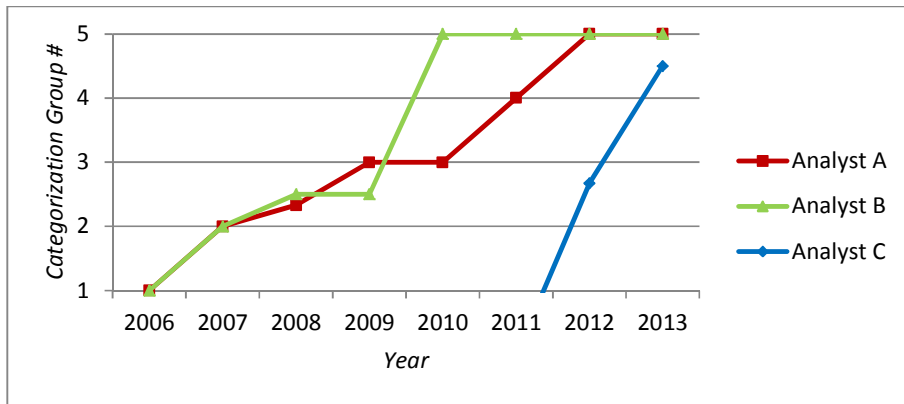

Figure 7. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

In order to further study the pattern from the industry analyst firms as a group, the average of their categorization values in plotted in the graph below. The missing values from Analyst C between 2006 and 2010 unfortunately skew the presentation slightly.
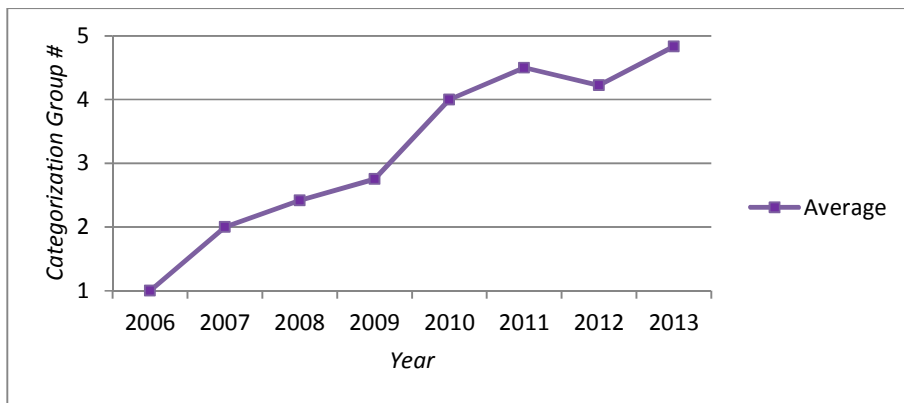

Figure 8. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

The trend and curve looks intermittently positive, potentially indicating that market transitions between maturation stages occurs in intervals once a certain level of market saturation or critical mass has been reached.

Categorization Comparison 2
To eliminate the potential distortion due to the missing values from Analyst C between 2006 and 2010, a separate set of graphs with the isolated categorization values from Analyst A and Analyst B is presented.

Figure 9. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

With categorization values from Analyst A and Analyst B isolated, the values plotted for the average between the two yields a slightly different result.

Figure 10. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

The average values visualized for Analyst A and Analyst B are intermittently positive in two distinct stages. The result is a S-curve shaped pattern with, for this context, a striking similarity with Rogers' 'Diffusion of Innovation S-curve'.

Categorization Comparison 3
To facilitate isolated analysis of the timeframe with representative values from all three industry analyst firms, a third set of plots is generated specifically for 2012(11)-2013.

Figure 11. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

As for the preceding scenarios, an average value graph is compiled for reference.

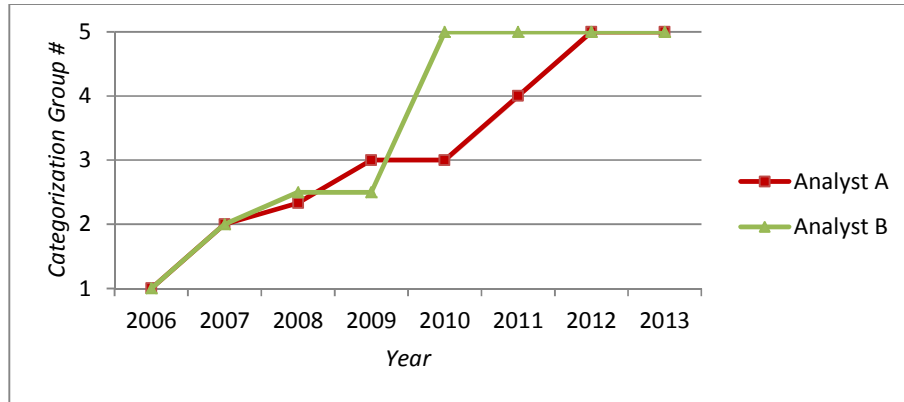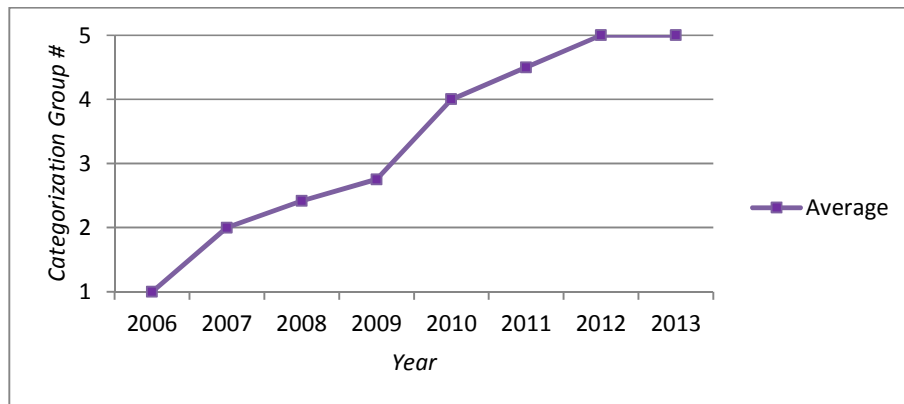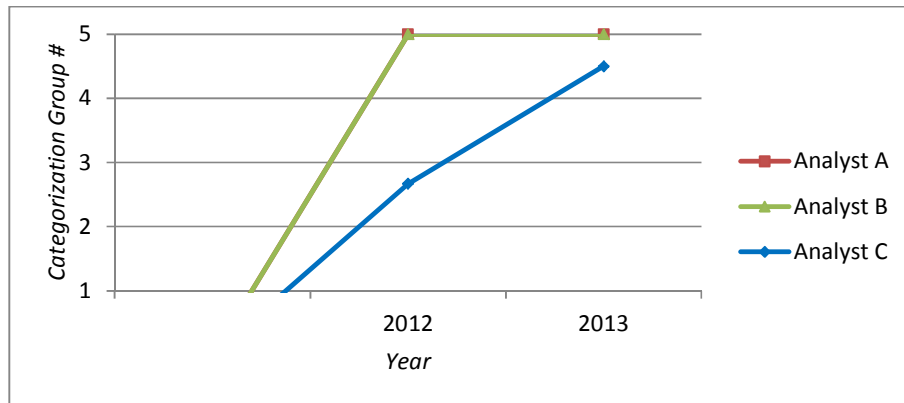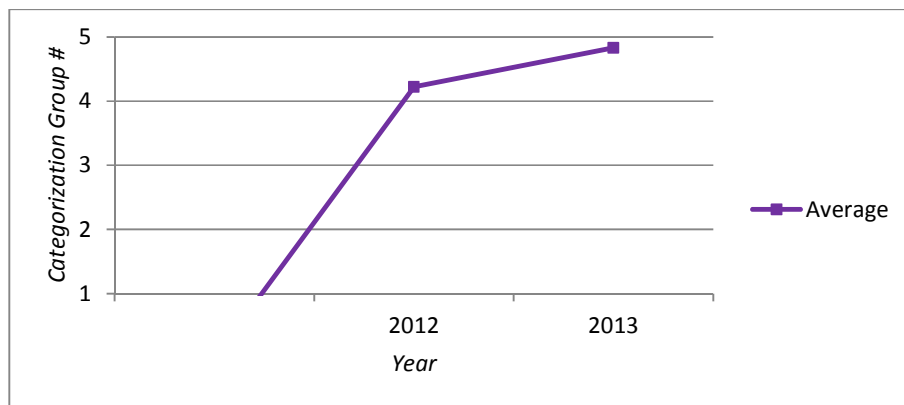
Figure 12. Analyst categorization analysis. See Appendix "Categorization Analysis Data" for data set details.

The standalone visualization for the timeframe with categorization values from all three industry analyst firms contains too few data points to provide a conclusive indication or pattern.

Looking at the overall results from the chosen visualization approach, three different outcomes can be summarised as follows.
-   For the first visualization of the categorization with the values from Analyst C impacting the pattern, the trend and curve looks intermittently positive.
-   For the second visualization where the data set has been isolated from values from Analyst C, a distinct S-curve shaped pattern emerges where the categorization of SaaS as a technology moves through the stages of diffusion of innovation adoption - from initial knowledge or awareness towards the perception of wider market adoption - within the industry analyst group as a self-contained end-user audience.
-   The isolated visualization of the shorter timeframe with all three industry analysts represented (2012(11)-2013) was inconclusive in terms of any indication of potential patterns.

A common denominator for the different parts of the performed analysis; keywords, definition and categorization, is that there are recurring patterns of alignment and convergence which can be observed throughout the analysis. The observed indications of convergence are explained by association to different mechanisms highlighted through the theoretical framework and previous research; diffusion of innovations, isomorphism, fad- and fashion theory, and translation. The alignment between industry analysts across the spectrum of keywords, definition and categorization constitute indicators of what this thesis proposes as patterns of co-propagation. Analogous with what Magnusson describes as a collaborative, collective process of creation - co-creation (Forth.), between vendors, suppliers and customers, the co-propagation process takes place exclusively between propagators. In this instance and context, the industry analysts, acting as promissory organizations, constitute propagators and the co-propagation process yields an output where over time, the communicated opinions and analysis of a technological concept from these industry analysts is a composite evaluation generated by a collective, rather than a number of unique, individual evaluations from isolated and independent industry analyst organizations. The aligning, converging patterns observed in the analysis, are indicators of patterns of co-propagation.

5 Discussion

This final chapter presents the research conclusions and fulfils the purpose of the research by answering the research question. Further it provides a discussion of the findings, criticism to the conducted research, the overall thesis contribution, managerial implications and suggestions for further research.

5.1 Discussion

The industry analysts can be perceived as a part of the market, and thus the categorization of a technological concept applied by the industry analysts can be used as an indication on how far the industry analysts per se have progressed in their adoption process of the technological concept itself. The categorization is in part based on the state of the market as represented by the industry analysts' research, but also in part on the active positioning of the technology by the industry analysts.

The analysis indicates that the industry analyst contribution to these processes takes place in the Realm of Creation (by introducing new concepts, accompanying definitions, and rating & categorization materials), and the Realm of Propagation which is the basis for their working business model. Established through isomorphism and translation - the technological concept is continuously created and propagated through the diffusion of innovation and co-creation processes.

In the background, research problem, and purpose for this thesis the notion of co-propagation was identified as one of the observation focus areas. It is established that industry analysts' have a role in the propagation of a technological concept, that they are involved in the diffusion of innovations, and that they - individually as well as a group - interact with other market parties. The industry analysts collect, evaluate and categorise information on defined technological concepts which they to some extent also participate in creating. This material is distributed, published - propagated - to their end-user audience in the market. Co-propagation is defined as a collaborative, collective process of propagation which takes place exclusively between propagators. To qualify as a collaborative, collective process of propagation it is expected that there are indications of alignment or interaction in the industry analyst report content. The analysis indicates that there are several patterns of alignment, hence co-propagation, present for the context, industry analysts and technological concept in question.

With 2006 as the starting point for the proprietary report material used in this research, a similar categorization of SaaS from its emergence to maturation can be identified between the two main industry analyst firms on the market, Gartner and Forrester. Unfortunately the data from the industry analyst Radar only covers the timeframe from 2011 and onwards, limiting part of the analysis.

The keyword analysis and the definition analysis both show a pattern where a dominant leader among the industry analysts develops definitions of technologies and introduce and retire sub-technologies. The other industry analysts show signs of imitation and translation in the adoption pattern of new innovations. The keyword analysis indicates a pattern of co-propagation among the industry analysts where the overall adoption rate of introduced sub-technologies is approximately fifty percent. From the point in time where a sub-technology is introduced by the leader of the industry analyst group, the adoption of the sub-technology concept by the other group members takes place between one to three years after its initial introduction.

32

The categorization analysis indicates a pattern of correlation between the maturation level of a technological concept and its overall adoption level in the market. Observing the average categorization of the technological concept by the industry analysts as a group over time, the resulting S-curve shaped pattern bears a striking similarity with Rogers' 'Diffusion of Innovation S-curve'.

The Rogers model does not in itself encompass the concept maturation dimension, whilst the Gartner Hype Cycle and the core of the industry analyst report messages are based on it. The similarity between the average categorization of the technological concept and the diffusion of innovation curve indicates a correlation where the market adoption level develops in sync with the maturation, and vice versa - the maturation level develops in sync with the market adoption level. This part of the analysis provides the basis for three interconnected observations. The first observation based on this correlation is that a technological concept with low market saturation is unlikely to reach a high maturation level, or that a technological concept with a low maturation level is unlikely to reach high market saturation.

The second observation is that the Rogers' S-curve correlation mainly applies to the co-propagated evaluation of the technological concept, the industry analyst evaluation average, as the individual industry analyst categorization curves observed in this thesis, for SaaS as technological concept, do not correlate as well with the S-curve pattern.

The third observation is that the pattern of co-propagated industry analyst adoption of a technological concept corresponds well with previous research, and specifically the diffusion of innovation model. The industry analysts should display the same pattern and behaviour as any other adopter group such as customers, or end-users in other comparable areas. When looking at the industry analysts as a group, the analysis identifies indications on that their adoption of the technological concept follows the Rogers' 'Diffusion of Innovation S-curve'.

Important to note is that the predefined criteria of the thesis specific categorization model is acknowledged as an influencing variable in these observations. With a different model, a different pattern emerges. This is an area where further research would be of benefit to corroborate or contradict these indications.

Looking at the industry analysts individually, the categorization analysis displays a pattern where Analyst B and C 'follows suit' with Analyst A (or vice versa, depending on who the market leader is). This is analogous with the patterns established in the keyword and definition analysis where a dominant leader among the industry analysts leads the way in establishing the co-propagated position from the industry analysts as a group.

The findings concluded through the analysis were not entirely in line with the authors' original views when compared to the expected results. A degree of fluidity in the definition and meaning of the concept over time was expected, and could also be seen in the results from the keyword and definition analyses. The positioning of the concept over time was expected to follow a Gartner Hype Cycle-like curve, but the emerging pattern from the categorization analysis rather points to a S-shaped curve, similar to the original Rogers' Diffusion of Innovation curve (1962).

It can be said that there are indications of a pattern to the positioning of the concept between the industry analysts, as outlined in the expected results; the market leader drives and

progresses the established 'truth' whilst the competitors follow their lead. The expected signs of a 'Simon says ..'-effect within the group of industry analysts. No extreme differences in opinion and predictions were published and the followers focused on the core technologies already established.

5.2   Conclusions

The substantive aim of this thesis was to shed light on how industry analysts interact and contribute to the diffusion of innovations through posing the following research question:
- How do industry analyst opinions change over time, and what potential patterns of interactions between different industry analysts can be identified?

Application of the theoretical framework and analysis of the empirical material yielded the following conclusion:

- The analysis identifies indicators of patterns of co-propagation, where the individual industry analyst firm is affected by the analysis provided for the technological concept by its peer competitors, with regard to definitions and categorizations.
- The industry analysts, individually and as a group, align towards a common definition-, as well as towards a similar categorization, of the technological concept.
- Within their group, the industry analysts show signs of imitation and translation in the adoption pattern of new innovations, and follow the Rogers' 'Diffusion of Innovation S-curve' when forming the categorizations of a technological concept.

5.3   Limitations

Criticism and vulnerabilities in the method and analysis
There are several limitations in the thesis that need to be addressed further. First, given the choice in method there is an issue of representability. With only one technological concept as the chosen artefact for observation, there are limitations in the generalizability of the findings.

The risks and issues with the chosen method and the empirical material used for the thesis have been pointed out earlier. These limitations have been taken into account throughout the research process and are reflected in the presentation of the findings. Additional limitations with the chosen problem and delimitations are that there are other mechanisms in the marketplace such as customer- or supplier influence directed towards the industry analysts reflected in the report material, which isn't included in the analysis.

The use of secondary material in the form of industry analyst reports, with the approach of applying synthesising research using the triangulation model described by Jick (1979) leaves a degree of interpretation and categorization of the materials. To support and aid the process strict, stringent criteria for the interpretation have been set up and applied to minimize interference - as presented in the analysis - but the risk for human error and individual views increases. In terms of the data set, it would ideally have represented a longer timeframe and included multiple points of reference per year, to facilitate the identification of a tangible and convincing indicator in each analysis.

Awareness of these risks and limitations has minimized the impact on the research process, but the problems and issues they pose are acknowledged.

5.4 Thesis contribution

The contribution of this thesis in the area of diffusion of innovation is three-fold.
Firstly, it further highlights and examines the role of the industry analyst in diffusion of innovation as proposed in previous research.

Secondly, with inspiration from Ask & Magnusson (2013), Pollock & Williams (2010), the notion of 'co-propagation' amongst promissory organizations is introduced as industry analysts on the market do not act in total isolation from their competitors, and that messages distributed by one organization affect future evaluations made by other industry analysts in the same marketplace. Co-propagation corresponds to the co-creation mechanisms identified by Magnusson (Forth), but instead of a process taking place between the suppliers, customers and industry analysts as actors - the co-propagation takes place between the industry analysts. The conclusion is that over time a consensus which is iteratively developed within the industry analyst firm group, is communicated in addition to the unique perspectives and analyses from each respective analyst firm.

Third, the methodological approach provides two new perspectives in the analysis of industry analyst report material which may serve as a tool for further refinement of research in this area.

1. This thesis applies a macro diffusion method where the qualitative data is analysed through quantitative visualization, where trends and patterns can be identified. Application of this composite analysis provides future research in this area with an alternative approach to studying text based materials.
2. The crossover between the qualitative stage and the quantitative visualization of the results is enabled through an interpretation model established in this thesis specifically for the categorization of industry analyst evaluation of technological concepts. This can be applied to market analysis material within other areas as well to consistently perform qualitative analysis with emphasis on market adoption rate/level, and concept maturity.

5.5 Implications for research and management

In addition to the theoretical contributions covered in the previous sub-chapter, this study has provided new insights for research as well as for applied business management.

From an academic point of view, the implications are two-fold.
The first implication concerns the notion of the concept of co-propagation, patterns of co-propagation, and potential additional patterns of co-propagation amongst the group of industry analysts. These factors constitute an additional variable to take into account in future research, in the areas of diffusion of innovation, promissory organizations, and the software industry.
The second implication concerns the methods and analysis. It is proposed that future research in this area may be able to benefit from using either both of the presented analysis methods, or each in isolation, as a source of inspiration as it may yield additional insight as well as further validate this analysis approach through exposure to other materials.

The research also provides a contribution which should be of interest to managers within industrial organizations. It is crucial to obtain awareness of the behaviour and factors affecting the industry analyst firms, as it is often upon the basis of their advice and analysis vast capital and operational expenditure investments are made.

5.6   Further research

Further research to extend or confirm the methods applied, and analysis presented in this thesis is suggested.

 - Research to establish whether similar patterns of co-propagation can be found for other technological concepts such as e.g. CRM, ERP, or AIS, using the composite analysis approach as inspiration.

 - Investigation of industry analyst interaction by different methods, such as interviews and case studies.

Furthermore, when the industry analysts are writing the reports and researching specific product types they list companies that choose to actively participate with access to software and information, and those that did not. Both categories are presented in the reports but can the participation choice be detected in the product development and the assessed capabilities of the product? Is there a difference in how this choice is positioning the company's product in for example Gartner's Magic Quadrant? By illuminating the relationship from this angle increased knowledge about the promissory organizations can be gained.

6 References

6.1 Literature and Published articles

Abrahamson, E. (1991). Managerial Fads and Fashions: The diffusion and rejection of innovation. *The Academy of Management Review*, Vol. 16, No. 3, pp. 586-612.

Abrahamsson, E. (1992). Forging the iron cage: Interorganizational networks and the production of macro-culture. *Journal of Management Studies,* 29:2.

Ask, U., Magnusson, J. (2013). Conceptual fluidity in the study of accounting information systems: the case of corporate performance management. *International Journal of Business Information Systems*, 14:3 pp. 280-304.

Ax, C., Bjornenak, T. (2007). Bundling and diffusion of management accounting innovations - the case for the balanced scorecard in Sweden. *Management Accounting Research,* 16:1, pp. 1-20.

Bass, F. (1969). A new product growth model for consumer durables. *Management Science,* 15 (5). pp. 215–227.

Borup, M., Brown, N., Konrad, K., van Lente, H. (2006). The Sociology of Expectations in Science and Technology, *Technology Analysis & Strategic Management* 18, 3-4 pp. 285-98.

Brown et al (2000). Introducing Contested Futures: From Looking into the Future to Looking at the Future. In N. Brown, B. Rappert & A. Webster (Eds.). Contested Futures: A Sociology of Prospective Science and Technology. Aldershot. Ashgate.

Burks, T.D. (2006). Use of information technology research organizations as innovation support and decision making tools. *Proceedings of the 2006 Southern Association for Information Systems Conference*.

Callon, M. (2007). What Does it Mean to Say that Economics is Performative?. In MacKenzie, D., Muniesa, F. & Siu, L. (Eds). On the Performativity of Economics: Do Economists Make Markets. Princeton University Press. Princeton. pp. 311-57.

Cavanagh S. (1997). Content analysis: concepts, methods and applications. *Nurse Researcher,* 4, pp. 5–16.

Cole F.L. (1988). Content analysis: process and application. *Clinical Nurse Specialist,* 2(1), pp. 53–57.

Czarniawska, B. & Joerges, B. (1996). Travels of Ideas. In Czarniawska, B (Ed.) et al. *Translating organizational change.* De Gruyter. Berlin.

Czarniawska-Joerges, B. (1990). Merchants of meaning. Turner, B. A. (Ed.) et al. *Organizational symbolism*. De Gruyter. Berlin. pp. 139-150.

Desisto, R.P. (2013). Hype Cycle for Software as a Service. *Gartner Research* ID No. G00252486

DiMaggio, P. J., Powell, W. W. (1983) The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48. pp. 147-160.

Downe-Wamboldt B. (1992). Content analysis: method, applications and issues. *Health Care for Women International,* 13, pp. 313–321.

Elo, S., Kyngäs. H. (2007). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1).

Esaiasson P., Gilljam M., Oscarsson H., Wängnerud L. (2012). Metodpraktikan : Konsten att studera samhälle, individ och marknad. *Norstedts juridik*, Stockholm. pp. 57-65.

Fenn, J. (2007). Understanding Gartner's hype cycles. *Gartner Research* ID No. G00144727, archived.

Fenn, J., Raskino, M. (2013).Gartner's Hype Cycle Special Report for 2012. *Gartner Research* ID No. G00255225.

Fichman, R.G. (1992). Information Technology Diffusion: A Review of Empirical Research. MIT Sloan School of Management.

Fichman, R.G. (1999). The diffusion and assimilation of information technology innovations. In Zmud, R.W. (Ed.): *Framing the Domains of IT Management: Projecting the Future Through the Past.* Pinnaflex Educational Resources Inc.

Firth, D., Swanson, E. B. (2005). How Useful are IT Research and Analysis Services?. *Business Horizons*, 48 (2) (March/April). pp.151-59.

Geels, F., Smit, W. (2000). Failed Technology Futures: Pitfalls and Lessons From a Historical Survey. *Futures* 32 (9/10). pp. 867-85.

Hirsch, P. M. (1972). Processing fads and fashions: An organizational set analysis of cultural industry systems. *American Journal of Sociology*, 77. pp. 639-659.

Howells, J. (2006). Intermediation and the Role of Intermediaries in Innovation. *Research Policy* 35 (5). pp.715-728.

Hägerstrand, T. (1952).The propagation of innovation waves. *Studies in Human Geography*, Series B 4. pp.3–19.

Jacobsen, D. (2002). *Vad, hur och varför : om metodval i företagsekonomi och andra samhällsvetenskapliga ämnen.* Lund : Studentlitteratur.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly*, Vol. 24, No. 1. pp. 602–611.

Johnson, H., T. & Kaplan, R., S. (1991). Relevance lost : the rise and fall of management accounting. Harvard Business School Press. Boston.

Kirk, J., & Marc L. Miller. (1986). *Reliability and Validity in Qualitative Research*. Sage Publications. Newbury Park.

Krippendorff, K. (1980). *Content Analysis: An Introduction to its Methodology.* Sage Publications. Newbury Park.

Latour, B. (1986). The Powers of Association. In John Law (Ed.). *Power, action, and belief.* London. Routledge & Kegan Paul. pp. 264-280.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Sage Publications. Beverly Hills.

Maddison, A. (1991). *Dynamic Forces in Capitalist Development.* Oxford University Press. Oxford.

Magnusson, J. (2010). Professional analysts and the ongoing construction of IT governance. *International Journal of IT/Business Alignment and Governance*, Vol. 1, No. 2. pp. 1–16.

Magnusson, J. (Forth.). *Theatre of Cocreation: Toward a theory of how technology frameworks are created.* Working paper.

Modell, S. (2007). Managing Accounting ChanIe. In T. Hopper, D. Northcott, and R.W. Scapens, (Ed.). *Issues in Management Accounting.* p. 336-355.

O'Leary, D.E. (2009). The impact of Gartner's maturity curve, adoption curve, strategic technologies on information systems research, with applications to artificial intelligence, ERP, BPM, and RFID. *Journal of Emerging Technologies in Accounting*, Vol. 6, No. 1. pp. 1–22.

Pollock, N., Williams, R. (2010). The business of expectations: How promissory organizations shape technology and innovation. *Social Studies of Science 40*. pp. 525-548.

Preda, A. (2005). Legitimacy and status groups in financial markets. The British Journal of Sociology. 56(3)

Rogers, E. M. (1962, 2003). *Diffusion of Innovations.* Free Press. New York.

Sandelowski M. (1995). Qualitative analysis: what it is and how to begin?. *Research in Nursing & Health 18*, pp. 371–375.

Sevón, G. (1996). Organizational Imitation in Identity Transformation. In Czarniawska, B (Ed.) et al. *Translating organizational change.* De Gruyter. Berlin.

Swanson, E., Burton & Ramiller, N. (1997) The Organizing Vision in Information Systems Innovation. Organization Science 8 (5). pp. 458-74.

Van Lente, H. (1993). Promising Technology: The Dynamics of Expectations in Technological Developments Proefschrift. Amsterdam.

Van Lente, H. & Rip, A. (1998) Expectations in Technological Developments: An Example of Prospective Structures to be Filled in by Agency. In C. Disco & B. van der Meulen (Eds). Getting New Technologies Together. Walter de Gruyter. Berlin. pp. 203-29.

Wang, P., Ramiller, N. (2009). Community learning in information technology innovation. *MIS Quarterly*, 33(4), pp. 709–734.

6.2 Online Resources

SIIA (Software & Information Industry Association). *Software as a Service: Strategic Backgrounder.* February 2001. (28/12/2013)
http://www.siia.net/estore/pubs/SSB-01.pdf

6.3 Analyst Reports References

6.3.1 Gartner Inc.

1. Lewis M. Clark, Robert P.Desisto, James Holincheck, et al. (2006). Hype Cycle for Software as a Service, 2006. Archived.
2. Robert P. Desisto, Ben Pring, Bill Gassman, et al. (2007). Hype Cycle for Software as a Service, 2007. Archived.
3. Robert P. Desisto, Michele Cantara, Eric Thoo, et al. (2008). Hype Cycle for Software as a Service, 2008. Archived.
4. Robert P. Desisto, Kimberly Collins, James Holincheck, et al. (2009). Hype Cycle for Software as a Service, 2009. Archived.
5. Robert P. Desisto. (2010). Hype Cycle for Software as a Service, 2010. Archived.
6. Robert P. Desisto. (2011). Hype Cycle for Software as a Service, 2011. Archived.
7. Robert P. Desisto. (2012). Hype Cycle for Software as a Service, 2012. Archived.
8. Robert P. Desisto. (2013). Hype Cycle for Software as a Service, 2013.
9. Sharon A. Mertz, Tom Eid, Chad Eschinger, et al. (2008). 2007-2012 Report Highlight for Market Trends Software as a Service, Worldwide. Archived.
10. Ben Pring, Twiggy Lo. (2009). 2009 Report Highlight for Dataquest Insight_ SaaS Adoption Trends in the U.S. and U.K. Archived.

Note. 'Archive' indicates that this research is provided by Gartner Inc. for historical perspective and that portions of this document may not reflect current conditions.

6.3.2 Forrester Research Inc.

1. Software-As-A-Service Adoption, 2006
2. SaaS_Market_Pulse_1H_2007, 2007
3. Global Software-As-A-Service Adoption, 2008
4. Vendors_ Get Ready For Business SaaS_Web 2.0 Majority Adoption, 2008
5. Software-as-a-service_adoption_trends_by_country, 2008
6. Software-As-A-Service Adoption Expands, 2009
7. SaaS Adoption 2010_ Buyers See More Options But Must Balance TCO, Security, And Integration, 2010
8. SaaS Adoption, 2010
9. The SaaS Market Hits Mainstream, Adoption Highlights, 2011
10. Software-As-A-Service Adoption In Europe, 2012
11. SaaS Adoption Trends In Asia Pacific For 2013 And 2014, 2013

6.3.3 Radar Ecosystem Specialists

1. IT-Radar-2012, 2012
2. Molntjänster 2012-2016, 2012
3. CIO-sammanfattning-av-rapporten-Molnmarknaden-2012-16, 2012
4. Nordic-Cloud-Market-2014-16, 2013
5. Radar-about-Cloud-Security-Trends, 2013

6.4 Figure Reference List

1. Figure 1. Thesis disposition. Proprietary design by the authors.
2. Figure 2. Rogers Diffusion of Innovation vs adopter categories. (http://en.wikipedia.org/wiki/File:Diffusion_of_ideas.svg, (01/01/2014)
3. Figure 3. Gartner Hype Cycle. http://www.gartner.com/technology/research/methodologies/hype-cycle.jsp (01/01/2014)
4. Figure 4. Theoretical concept of thesis. Proprietary design by the authors.
5. Figure 5. Gartner keyword patterns. Proprietary design by the authors.
6. Figure 6. Forrester keyword patterns. Proprietary design by the authors.
7. Figure 7. Analyst categorization analysis. Proprietary design by the authors.
8. Figure 8. Analyst categorization analysis. Proprietary design by the authors.
9. Figure 9. Analyst categorization analysis. Proprietary design by the authors.
10. Figure 10. Analyst categorization analysis. Proprietary design by the authors.
11. Figure 11. Analyst categorization analysis. Proprietary design by the authors.
12. Figure 12. Analyst categorization analysis. Proprietary design by the authors.

7 Appendix

7.1   Categorization Analysis

Level Title	Keywords - Extracted	Keywords - highlighted	Year	Analyst
1 - Knowledge/Awareness	significant interest	"SaaS is no longer just an SMB play; large enterprises show *significant interest* in SaaS SaaS vendors still have work to do in narrowing the integration and customization gaps between SaaS and on-premise apps Security concerns are still a major hurdle in SaaS adoption SaaS vendors must prove value for the dollar; firms cite total cost of ownership as a reason for preventing them from considering SaaS "	2006	A
2 - Persuasion	"become the key buzzword", "traditional software vendors have made serious business investments in the market"	"Rather quickly, SaaS has **become the key buzzword** in the software world.", "**traditional** on-premise **software vendors** like Microsoft, Oracle and SAP, who had turned their noses up at SaaS, have now recognized its strong appeal and **have made serious business investments in the market**", "SaaS commands a presence in the software marketplace"	2007	A
3 - Decision	"early majority adoption", "SaaS will continue to grow"	"*early majority adoption*", "SaaS will *continue to grow* impressively", "Forrester believes that SMBs are likely to jump directly from being "very interested" to "using," bypassing the pilot phases that enterprise buyers prefer", "Enterprise SaaS adoption is now similar to SMB adoption at 15%, but with a much fatter pipeline for the next 12 month purchases"	2008	A
2 - Persuasion	"Preference for SaaS is relatively low", "not	"*Preference for SaaS is relatively low* across countries", "A significant amount of firms are *not interested or don't know enough* about SaaS", "Cost and security *concerns keep firms away* from SaaS"	2008	A
2 - Persuasion	"only nascent adoption", "considerable interest",	"Software-as-a-service (SaaS) has *only nascent adoption* in Asia Pacific — but there is *considerable interest*", "*Interest has not translated to adoption* for SaaS in Asia Pacific"	2008	A
3 - Decision	"GROWING IMPORTANCE OF SAAS", "continue to invest"	"SOURCING EXECUTIVES MUST RECOGNIZE THE *GROWING IMPORTANCE OF SAAS* Firms *continue to invest in SaaS*, even in the current recession", "*SaaS is growing* far beyond its early roots as a point or divisional solution"	2009	A
3 - Decision	"INTEREST IN SAAS EXPANDS"	"FIRMS' *INTEREST IN SAAS EXPANDS* AND BROADENS ACROSS APP CATEGORIES", "Firms See Low TCO, Fast Deployment, And Reduced Burden On IT As Key Drivers For SaaS"	2010	A
4 - Implementation	"several years of cloud computing "hype", "CONTINUE TO INVEST IN SAAS", "many examples of successful cloud initiatives"	"technology professionals have now experienced *several years of cloud computing "hype,"*", "FIRMS *CONTINUE TO INVEST IN SAAS*", "many *examples of successful cloud initiatives*", "Sourcing executives are increasingly considering SaaS solutions as part of their overall technology vendor landscape", "Firms almost *always consider software-as-a-service (SaaS)* as a cost-advantage over on-premises in the short run"	2011	A
5 - Confirmation	"mainstream trend", "The Wild West adoption of cloud is over", "investments will accelerate strongly"	"SaaS has become a *mainstream trend across Europe*. Overall adoption rates will be growing from approximately 15% in 2011 to 40% and more over the next two years", "The *Wild West adoption of cloud is over*", "SaaS *investments will accelerate strongly* across Europe"	2012	A
5 - Confirmation	"adoption is rapidly going mainstream", "demand has increased sharply"	"Software-as-a-service (SaaS) *adoption is rapidly going mainstream* across more and more markets", "SaaS *demand has increased sharply* across all major markets", "Shifts In SaaS-Related Concerns Reflect Growing Market Maturity And SaaS Awareness", "Complete IT *resistance to SaaS has steadily given way* to more pragmatic discussions"	2013	A
1 - Knowledge/Awareness	"often associated with CRM", "also taking hold in other software categories"	Software as a service (SaaS) is often **associated with CRM** applications in domains such as sales, client service and marketing. It is **also taking hold in other software categories**, such as supply chain management (SCM), and in domains such as the highperformance workplace.	2006	B
2 - Persuasion	SaaS is not a panacea, "it remains only a small fraction of the software industry"	Despite its promise, **SaaS is not a panacea** for the complex people and process issues in most organizations. It **remains only a small fraction** of the software industry and the application code base in a typical enterprise.	2008	B
3 - Decision	"grown for nearly a decade", "popularity has increased significantly", "adoption has become more widespread."	"Adoption of the on-demand deployment model has **grown for nearly a decade**, but its popularity has **increased significantly** within the last four years. Initial concerns over security, response time, and service availability have diminished for many organizations as SaaS business and computing models have matured and **adoption has become more widespread**."	2008	B
3 - Decision	"for mature markets such as sales force automation and Web analytics, the technologies have moved very quickly through the Hype Cycle"	The Hype Cycle for Software as a Service, 2009, illustrates the dynamics of this formative delivery method and associated technologies. For **mature markets such as sales force automation and Web analytics**, the technologies have **moved very quickly through the Hype Cycle**. Users have a reasonable expectation of what SaaS offers and the value it can bring. This is contrasted with the 19 technologies in new and emerging markets that dominate the Technology Trigger section on the SaaS Hype Cycle.	2009	B
2 - Persuasion	"does not provide a ringing endorsement of SaaS", "lukewarm"	The data in this research **does not provide a ringing endorsement of SaaS**; satisfaction levels among SaaS users are little more than **lukewarm**: Larger enterprises are more satisfied than smaller ones. U.S. enterprises are more critical than those in the U.K.	2009	B
5 - Confirmation	" the most mature of the cloud types", "rare to find companies that are not using some type of SaaS	SaaS refers to applications delivered as cloud services, and is, in many ways, **the most mature of the cloud types**. While this maturity varies by type of application, it is **rare to find companies that are not using some type of SaaS**, as it is likely to penetrate every company at one level or another. The 2010 Hype Cycle for SaaS illustrates the dynamics of this formative delivery method and associated technologies. For mature markets, such as sales force automation and Web analytics, the technologies have **moved very quickly through the Hype Cycle**. In these markets, users have a reasonable expectation of what SaaS offers and the value it can bring. Other technologies, particularly those with a heavy dependence on large data sets such as business intelligence, or where perceived security or risks are too high, have moved through the Hype Cycle with a much slower velocity.	2010	B
5 - Confirmation	SaaS is in many ways the most mature of the cloud types, continuing to get buzz in the market", "rare to find companies that are not using	There are many types of cloud computing, and each is progressing at a different rate. **SaaS** refers to applications delivered as cloud services, and **is in many ways the most mature of the cloud types**, though **continuing to get buzz in the market**. While this maturity varies by type of application, it is **rare to find companies that are not using some type of SaaS**, as it is likely to penetrate every company at one level or another.	2011	B
5 - Confirmation	"most mature", "rare to find companies that are not using some type of SaaS"	SaaS refers to applications delivered as cloud services, and is in many ways the **most mature** of the cloud-related services. While this maturity varies by type of application, it is **rare to find companies that are not using some type of SaaS**, as it is likely to penetrate every company at one level or another.	2012	B
5 - Confirmation	"most mature of the cloud-related services.", "rare to find companies that are not	There are many types of cloud computing, and each is progressing at a different rate. SaaS refers to applications delivered as cloud services, and is in many ways **the most mature of the cloud-related services**. While this maturity varies by type of application, it is **rare to find companies that are not using some type of SaaS**, as it is likely to penetrate every company at one level or another.	2013	B
2 - Persuasion	"Kundnöjdheten med molntjänster är högre."	"Kundnöjdheten med molntjänster är högre än kundnöjdheten med traditionell IT hos de svenska verksamheter som har erfarenhet.", "Molntjänster kommer med ett starkt löfte om minskade kostnader, ökad flexibilitet och högre kundnöjdhet än traditionellt levererad IT i Sverige."	2012	C
3 - Decision	"växer med över 30 procent årligen, dock från relativt låga värden ännu.", "Molntjänstemarknaden är i en fas av kraftig tillväxt och utveckling", "molntjänster	"Den starkaste tillväxten står SaaS (Software as a Service) och PaaS (Platform as a Service) för. Båda dessa områden ligger inom molntjänster som **växer med över 30 procent årligen, dock från relativt låga värden** ännu.", "**Molntjänstemarknaden är i en fas av kraftig tillväxt och utveckling**, där tillväxten förväntas vara fortsatt hög under åren 2012-2016 tillsammans med ett ökat utbud av produkter. Sättet att konsumera IT genom **molntjänster har nått acceptans och en ökad mognad hos kunderna**. Penetrationen ökar, dvs andelen verksamheter som tar till sig molntjänster, såväl som ökande åtaganden hos existerande kunder som budgeterar mer åtaganden i molntjänster under året."	2012	C
3 - Decision	"kraftig tillväxt och utveckling, "SaaS utgör den absolut största delen av molntjänster idag"	"Molntjänstemarknaden är i en **fas av kraftig tillväxt och utveckling**, där tillväxten förväntas vara fortsatt hög under åren 2012-2016 tillsammans med ett ökat utbud av produkter", "**SaaS** - Software as a Service eller mjukvara som tjänst **utgör den absolut största delen av molntjänster** idag", "Den totala SaaS-marknaden växer från 4 miljarder till att förväntas passera 6 miljarder innan 2015."	2012	C
4 - Implementation	"rapid growth.", "accelerate growth further"	"The Nordic Cloud market is a market in **rapid growth**. The upcoming years the drivers behind the market growth will **accelerate growth further**"	2013	C
5 - Confirmation	"nothing new", "a sustainable way to increase enterprise value"	"Cloud is "**nothing new**" on the sky", "Cloud is **not a new concept**", "The ability to scale---on---demand, consume resources only when required, and replace capital expenditures (CapEx) with operating expenses (OpEx) opens new avenues to business. The **cloud has become a sustainable way to increase enterprise value**, innovate, and differentiate an organization in the marketplace. The signs are clear that the cloud **market is maturing rapidly**, and this is expected to keep driving adoption rates in the enterprise cloud market"	2013	C

7.2   Categorization Data

Comparison 1

Year	Analyst A	Analyst B	Analyst C	Average
2006	1	1		1,0
2007	2	2		2
2008	2,33	2,5		2,4
2009	3	2,5		2,8
2010	3	5		4,0
2011	4	5		4,5
2012	5	5	2,67	4,2
2013	5	5	4,5	4,8

Comparison 2

Year	Analyst A	Analyst B	Average
2006	1	1	1
2007	2	2	2
2008	2,33	2,5	2,4
2009	3	2,5	2,8
2010	3	5	4
2011	4	5	4,5
2012	5	5	5
2013	5	5	5

Comparison 3

Year	Analyst A	Analyst B	Analyst C	Average
2011				
2012	5	5	2,67	4,2
2013	5	5	4,5	4,8

7.3 Gartner Inc. Keyword Data

Gartner Inc. Reports	2006	2007	2008	2009	2010	2011	2012	2013
	Hype Cycle for Software as a Service, 2006	Hype Cycle for Software as a Service, 2007	Hype Cycle for Software as a Service, 2008	Hype Cycle for Software as a Service, 2009	Hype Cycle for Software as a Service, 2010	Hype Cycle for Software as a Service, 2011	Hype Cycle for Software as a Service, 2012	Hype Cycle for Software as a Service, 2013
# of pages	40	40	53	77	72	60	62	68
SaaS + Software as a Service	147	232	421	558	484	520	440	501
SEAS + SaaS-enabled application server + SEAP	0	11	27	34	0	0	0	0
PaaS + Platform as a Service	0	0	40	44	93	15	31	90
Cloud (all combinations)	0	0	17	155	313	188	248	402
ASP + Application Service Provider	16	8	12	9	6	2	1	2
Private SaaS	0	0	0	0	0	0	0	2
Community SaaS	0	0	0	0	0	0	0	3
Private Cloud	0	0	0	2	3	4	9	9
Public Cloud	0	0	0	0	4	6	6	12

Note, the data is presented unnormalized.

7.4 Forrester Research Inc. Keyword Data

Forrester Research Inc. Reports	2006	2007	2008	2009	2010	2011	2012	2013
	No report matching criterion	Software-as-a-service_adoption 2006 Sept	Global Software-As-A-Service Adoption, 2008	Software-As-A-Service Adoption Expands, 2009	SaaS Adoption 2010_ Buyers See More Options But Must Balance TCO, Security, And Integration	The SaaS Market Hits Mainstream_ Adoption Highlights 2011	Software-As-A-Service Adoption In Europe, 2012	SaaS Adoption Trends In Asia Pacific For 2013 And 2014, 2013
# of pages	0	9	7	4	4	5	6	8
SaaS + Software-as-a-Service	0	23	9	45	63	76	40	143
SEAS + SaaS-enabled application server + SEAP	0	0	0	0	0	0	0	0
PaaS + Platform as a Service	0	0	0	0	2	2	0	0
Cloud (all combinations)	0	0	0	0	9	23	9	72
ASP + Application Service Provider	0	0	0	0	0	0	0	0
Private SaaS	0	0	0	0	0	0	0	0
Community SaaS	0	0	0	0	0	0	0	0
Private Cloud	0	0	0	0	0	0	0	0
Public Cloud	0	0	0	0	0	0	0	18

Note, the data is presented unnormalized.

Forrester Research Inc. published the first report in September 2006, and no separate report was produced for 2007. In the analysis, the report is attributed to 2007, hence the Forrester Research Inc. keyword analysis spans 2007-2013. This has no effect or bearing on the analysis itself.

7.5   Gartner Inc. SaaS Definitions

7.5.1   2006 SaaS Definition

Hype Cycle for Software as a Service, 2006. Lewis M. Clark, Robert P.Desisto, James Holincheck, et al.

Software owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premise using their infrastructures, then it isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions, which are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools supplied by the provider, but without altering the source code. This approach is in contrast to the traditional application hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer.

On a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

These trends will affect various parts of the organization:

- A CIO or application manager needs to assess technologies with respect to their maturity and peer adoption.
- Business users may gain influence in selecting or shaping applications to fit their functional needs. However, they should be careful not to marginalize the IT organization, which will still be closely involved for customization requirements and service-level agreements to minimize outages.
- For enterprise architects, SaaS intersects with other technologies, such as infrastructure as a utility and service-oriented architecture.
- Procurement or sourcing managers may need an entirely new set of best practices to deal with the shifting market position and relationships among software vendors, systems integrators and infrastructure providers.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application

code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are a good match.

7.5.2   2007 SaaS Definition

Hype Cycle for Software as a Service, 2007. Robert P. Desisto, Ben Pring, Bill Gassman,et al.

SaaS is software owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on premise using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions, which are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools supplied by the provider, but without altering the source code. This approach is in contrast with the traditional application hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer. SaaS is purchased on a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

These trends will affect various parts of the organization:

- A CIO or application manager needs to assess technologies with respect to their maturity and peer adoption.
- Business users may gain influence in selecting or shaping applications to fit their functional needs. However, they should be careful not to marginalize the IT organization, which will continue to be closely involved for customization requirements and service-level agreements to minimize outages.
- For enterprise architects, SaaS intersects with other technologies, such as infrastructure as a utility and service-oriented architecture (SOA).
- Procurement or sourcing managers may need an entirely new set of best practices to deal with the shifting market position and relationships among software vendors, system integrators and infrastructure providers. These are in addition to the best practices they follow for evaluating functionality, technology, cost, services, viability and vision.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are a good match.

7.5.3   2008 SaaS Definition

Hype Cycle for Software as a Service, 2008. Robert P. Desisto, Michele Cantara, Eric Thoo, et al.

SaaS is software owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premises using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions, which are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools supplied by the provider, but without altering the source code. This approach is in contrast with the traditional application hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer. SaaS is purchased on a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

These trends will affect various parts of the organization:

- A CIO or application manager needs to assess technologies with respect to their maturity and peer adoption.
- Business users may gain influence in selecting or shaping applications to fit their functional needs. However, they should be careful not to marginalize the IT organization, which will continue to be closely involved for customization requirements and service-level agreements to minimize outages.
- For enterprise architects, SaaS intersects with other technologies, such as infrastructure as a utility and service-oriented architecture (SOA).
- Procurement or sourcing managers may need an entirely new set of best practices to deal with the shifting market position and relationships among software vendors, system integrators and infrastructure providers. These are in addition to the best practices they follow for evaluating functionality, technology, cost, services, viability

47

and vision.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are a good match.

7.5.4   2009 SaaS Definition

Hype Cycle for Software as a Service, 2009. Robert P. Desisto, Kimberly Collins, James Holincheck, et al.

SaaS is software owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premises using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions, which are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools that the provider supplies, without altering the source code. This approach is in contrast with the traditional application-hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer. SaaS is purchased on a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

These trends will affect various parts of the organization:

- The "buzz" of cloud computing has increased the visibility of SaaS applications by user organizations.
- The importance of integration with on-premises applications and data sources has greatly increased.
- Architectural differences have been magnified during the past year due to variability offered in multitenant infrastructure approaches.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are good matches.

7.5.5 2010 SaaS Definition

Hype Cycle for Software as a Service, 2010. Robert P. Desisto.

SaaS is software that is owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premises using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions, which are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools that the provider supplies, without altering the source code. This approach is in contrast with the traditional application-hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer.

SaaS is purchased on a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

The following trends will affect various parts of the organization:

- The "buzz" of cloud computing has increased the visibility of SaaS applications by user organizations.
- The importance of integration with on-premises applications and data sources has greatly increased.
- Architectural differences have been magnified during the past year, due to the variability offered in multitenant-infrastructure approaches.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are good matches.

7.5.6 2011 SaaS Definition

Hype Cycle for Software as a Service, 2011. Robert P. Desisto.

SaaS is software that is owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premises using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for

it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions that are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools the provider supplies, without altering the source code. This approach is in contrast with the traditional application-hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer.

SaaS is purchased on a pay-for-use basis or as a subscription based on usage metrics. Purchasing is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

The following trends will affect various parts of the organization:

- The buzz of cloud computing has increased the visibility of SaaS applications by user organizations.
- The importance of integration with on-premises applications and data sources has greatly increased.
- Architectural differences have been magnified during the past year, due to the variability offered in multitenant-infrastructure approaches.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are good matches.

7.5.7   2012 SaaS Definition

Hype Cycle for Software as a Service, 2012. Robert P. Desisto.

SaaS is software that is owned, delivered and managed remotely by one or more providers. If the vendor requires user organizations to install software on-premises using their infrastructures, then the application isn't SaaS. SaaS delivery requires a vendor to provide remote, outsourced access to the application, as well as maintenance and upgrade services for it. The infrastructure and IT operations supporting the applications must also be outsourced to the vendor or another provider.

The provider delivers an application based on a single set of common code and data definitions that are consumed in a one-to-many model by all contracted customers at any time. Customers may be able to extend the data model by using configuration tools the provider supplies, without altering the source code. This approach is in contrast with the traditional application-hosting model, in which the provider supports multiple application codes and multiple application versions or a customized data definition for each customer.

Purchasing SaaS is based on a subscription (for example, per-user, per-month fee) or use basis (for example, allocating a certain number of transactions for a fixed time period). A perpetual license purchase isn't considered SaaS.

The following trends will affect various parts of the organization:

- The buzz of cloud computing has increased the visibility of SaaS applications by user organizations.
- The importance of integration with on-premises applications and data sources has greatly increased.
- Architectural differences have been magnified during the past year, due to the variability offered in multitenant-infrastructure approaches.

Despite its promise, SaaS is not a panacea for the complex people and process issues in most organizations. It remains only a small fraction of the software industry and the application code base in a typical enterprise. The best adoption path will be deliberate use of SaaS, initially for narrow processes where the technology and vendor capabilities are good matches. It is worthy to note that most new vendors in the application market tend to have SaaS as their only or primary delivery model.

7.5.8   2013 SaaS Definition

Hype Cycle for Software as a Service, 2013. Robert P. Desisto

Software as a service (SaaS) is an application service available uniformly to all qualified subscribers. The application software is owned, delivered and managed by one or more providers. A SaaS service subscriber is exposed only to the application-level functionality, configuration and other application tooling, and does not monitor, manage or control the underlying infrastructure (including network, servers, operating systems, storage, databases or application platform services).
 A SaaS provider delivers an application based on a sharing model at one or more layers of the application stack (i.e., application logic, application platform, data platform and system infrastructure). SaaS is consumed as a subscription service that may be based on per user per month or some other quantifiable metric, such as transactions processed and logins.
 The following are key cloud application stack characteristics typically exploited with SaaS:
- Service-based
- Scalable and elastic
- Shared
- Metered by use
- Uses Internet technologies

Software as a service (SaaS) is an application service available uniformly to all qualified subscribers. The application software is owned, delivered and managed by one or more providers. A SaaS service subscriber is exposed only to the application-level functionality, configuration and other application tooling, and does not monitor, manage or control the underlying infrastructure (including network, servers, operating systems, storage, databases or application platform services).
A SaaS provider delivers an application based on a sharing model at one or more layers of the application stack (i.e., application logic, application platform, data platform and system infrastructure). SaaS is consumed as a subscription service that may be based on per user per month or some other quantifiable metric, such as transactions processed and logins.

7.6   Radar Ecosystem Specialists SaaS Definitions

Year	Radar Report	SaaS Definition
2006	No report availible	No report availible
2007	No report availible	No report availible
2008	No report availible	No report availible
2009	No report availible	No report availible
2010	No report availible	No report availible
2011	No report availible	No report availible
2012	IT-Radar-2012	No SaaS Definition
2013A	Molntjänster_2012-2016	1. Software as a Service (SaaS). Kund erbjuds möjlighet att använda applikationer som körs i leverantörens infrastruktur. Applikationerna körs genom en mindre krävande mjukvara, såsom en web-browser, eller annan typ av mjukvara anpassad för ändamålet. Kunden har inget direkt inflytande eller kontroll över infrastrukturen som driver applikationer, eller tillhörande utrustning såsom nätverk och servrar. Kunden har inte heller direkt och/eller full kontroll över applikationens konfigurationer och kapacitet, annat än på grundläggande nivå. Leverantören levererar applikation och kapacitet, med givna inställningar, enligt överenskommelse med kunden.
2013B	Nordic-Cloud-Market-2014-16.pdf	SaaS (Software as a Service): contains the uppermost layer of the Cloud architecture, the actual business application: e.g., CRM, ERP, collaboration, etc. SaaS users are generally "traditional" end-users within business units. SaaS provides applications/ services using a Cloud infrastructure or platform, rather than providing Cloud features themselves. Often, kind of standard application software functionality is offered within a Cloud.