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SaaS marketplaces: Visions from theory and experience from practice

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**SaaS Marketplaces - Visions from Theory
and Experience from Practice**

By

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SaaS Marketplaces - Visions from Theory and Experience from Practice

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Abstract

Cloud computing, especially Software-as-a-Service (SaaS), changes the IT processes of companies for application deployment, access, usage, maintenance, governance and management. In an age of Bring-Your-Own-Device, small businesses through to globally operating companies increasingly support their employees and customers with SaaS-applications that allow access to internal and external business information. Whether employees are in the office, at a client facility, at home or on the road, they need fast, easy access to business applications with any type of device.

SaaS offers companies an interesting alternative to classical on-premise IT solutions. Cloud computing provides innovative applications, high connectivity and performance, cost reduction, flexibility and fast time to market with a minimum of effort. Cloud computing is a special form of outsourcing that has its roots in the fifties. Ten years ago similar concepts to cloud computing e.g. Application Service Providing (ASP) appeared and failed. But it seems that the willingness to use cloud computing is now much higher and the cost pressure effects of the financial crisis also motivate decision makers in companies to focus on cloud computing.

This contribution presents the results of actual scientific literature investigations alongside interviews with owners of Software-as-a-Service Marketplaces. It describes several types of SaaS marketplaces using different business models to bring together customers and providers. It shows that SaaS marketplaces are two-sided and demonstrates how platforms are emerging that bundle features into significant value propositions for both sides.

This work is relevant to firms who seek business solution recommendations beyond the focus of their on-premise-focussed advisors. It is also relevant for owners and potential owners of SaaS marketplaces and SaaS providers exploring alternatives in their distribution mix.

Keywords: SaaS, marketplace, cloud computing, two-sided market

1 Introduction

Cloud computing, especially Software-as-a-Service, is a major challenge for companies and their IT departments. On the one hand, they are required to integrate cloud services into their environments. This requires IT departments to make decisions in the field of SaaS identification, SaaS evaluation, SaaS integration and SaaS governance. On the other hand, IT departments and IT companies can deploy cloud services either within the company or within a defined market. This requires IT departments to expand customer relationship management to SaaS-related aspects. To

determine whether a SaaS provider can be included into a company's IT portfolio, a functional, financial and organization-specific review of the SaaS life cycle is required. SaaS marketplaces can help IT departments in identifying and selecting appropriate SaaS offerings.

Based on a structured survey of the literature relevant to the topic "SaaS marketplaces", this study has uncovered a variety of ideas, concepts and strategies being developed in academia. Parallel to the literature analysis, semi-structured interviews were conducted with owners of Software-as-a-Service marketplaces. Based on these findings from the scientific literature, SaaS marketplaces were classified into different types. The results of this research show how SaaS marketplaces can bundle features into significant value propositions for SaaS suppliers and demanding companies.

This work is highly relevant to firms seeking business solution recommendations beyond the focus of their on-premise-focussed solutions. It is also relevant for owners and potential owners of SaaS marketplaces and for SaaS providers exploring alternatives in their distribution mix.

In the realm of scientific theory, the idea of software marketplaces is not new, with work by Tamm and Günther on application services provider (ASP) marketplaces published in 2000. At present there are only a few examples of relevant SaaS marketplaces. Salesforce AppExchange is one example of a SaaS marketplace with many buyers and sellers of SaaS CRM solutions, apps and integration, as well as community support allowing profiles of reviewers who can also cross-promote their own service expertise. Salesforce AppExchange is a vendor marketplace, part of the Salesforce ecosystem, created through the Salesforce Force.com development environment to offer greater value to Salesforce customers.

2 Structure of Paper

This paper is organised as follows: Section 3 explains the problem and the research question while the research method is outlined in Section 4. Section 5 presents the state of the art in the literature, including the definition of relevant terms. Section 6 describes the marketplace search that led to the creation of the Types of SaaS Marketplaces. Section 7 contains the interviews, results and discussion and the work concludes with Section 9.

3 Problem and Research Question

As business users demand the same usability they see in the consumer apps market and the younger generation of 'digital natives' ascend into positions of purchasing authority, new means of discovering solutions and meeting these needs must be developed. At the same time, SaaS as a part of cloud computing is breaking the control of value-added resellers (VARs), systems integrators and consultants in the recommendation of software. Software run on in-house tiered hardware is sold by firms whose interests are influenced by the skills of their workforce and the subsidies and promotions made by wholesalers and hardware manufacturers. Managed services providers are challenged by self-service SaaS, whose carefully designed simplicity does not require local

administrators and whose support is supplied by independent software vendors (ISVs) with large scale capacity eliminating the need for in-house hardware and technical support personnel. The market thus changes and several questions concerning the SaaS concept arise: Will SaaS marketplaces emerge to assist in matching the growing demand for business productivity with the increasing number of SaaS vendors? What are the factors affecting user adoption of SaaS? What forms of marketplaces exist and how are they meeting customer needs for SaaS?

With these questions in mind the following questions are proposed:

- i. What is the state of the art in literature relevant to the topic of SaaS marketplaces?*
- ii. What are the views of SaaS marketplace practitioners in relation to this literature?*

4 Research Method

An inductive approach was taken, as the purpose of this paper was to uncover the newest developments in the field in both theory and praxis rather than to prove or disprove a given theory. The project began with a survey of the literature: A structured search of actual literature relevant to SaaS marketplaces was carried out. Keyword searches were undertaken in the academic indices of ACM, IEEEExplore and Web of Science, along with the resources of publisher Axel Springer and Google Scholar. Preference was given for material published in the last 3 years in the field of computer science and 5 years in the field of economics with older references added for significant other works.

Parallel to the literature search approach an interview approach was developed. Instead of a questionnaire, a semi-structured interview with a researcher was thought to give firms more incentive to participate and possibly learn something new in exchange for their views, as well as being more time-efficient for the interviewed party. Making the offer to be interviewed as appealing as possible was thought necessary given the small size of the market and the relatively youth of the firms (most are less than 5 years old). Semi-structured interviews were also thought to offer the best chance to discover from the interview partners information that is not present in the literature. The interviews were undertaken anonymously to enable more open participation.

The purpose of the research questions was to explore key concepts and discover if they were also applicable in practice. Given that different types of marketplaces were identified during the study, it was impossible to ask questions applicable to all. Marketplaces are also at different stages of business development, discovering what works and building features.

The target group of SaaS Marketplaces is very small, perhaps no more than twenty. Five interviews were conducted with a representative sample from different types of marketplaces. Two interviews were conducted with SaaS providers to gain additional perspectives.

5 State of the Art

The literature search was divided between the computer science of SaaS and the business and economics of marketplaces. The state of the art presented here is intended to provide a representative sample of current literature applicable to the topic of business-oriented SaaS marketplaces. It is separated into the following topics: types of SaaS business models, bundling, aggregation, choice, SaaS adoption factors, SaaS risks and opportunities, pricing, financial management, two-sided markets, marketplace ignition, pricing and getting to ignition.

5.1 Types of SaaS Business Models

Luoma et.al (2012) researched the business models of 163 Finnish SaaS firms. In examining the current literature for SaaS business models they observed "that the essential facet of the SaaS Business Model seems to be the scalability of the entire business model"¹. Thus it may be observed that just as scalability is a key feature of cloud computing architecture, so too are the business models for ISVs that develop SaaS. This they attribute "to a standardised application, which is easily sold and delivered to large volumes of customers, while maintaining low marginal costs"².

Luoma et.al (2012) observed that a classification of operating SaaS companies does not exist and analysed the firms using the business model framework of Osterwalder et.al (2005) to propose three definitions that have been summarised in the following table:

¹ (Luoma, Rönkkö, & Tyrväinen, 2012 p190)

² *ibid*

	Self-Service	Pure-Play	Enterprise
Functionality	A simple application, easy to adopt. e.g. Evernote.	Horizontal, standardised web-native app	Mass customised but complex requiring support
Revenue	Freemium, ad-based or small recurring	Small entry and recurring fees	Entry fees, recurring fees and service fees
Target	1st adopted by end-users and individual consumers then SMEs	Target SMEs and sell to middle mgt and end-users	Larger enterprises & their IT-managers and top execs
Sales	Fully automated self-service, minimise interaction	Push oriented, inbound sales	Aim for high touch relationships, tailored contracts
Marketing	Outbound & viral marketing to attract customers to home page.	Less human contact in deployment due to simpler applications	Personal, consultative sales + channel partners
Partners	Landing page critical to turning prospects into customers	SaaS firms have domain and app. devt experience. Partner VARS & SIs.	Domain expertise. Use ecosystem of companies as resources. Partners deliver value-added apps.
Costs	Close to zero marginal costs	Initial development costs may be high but firm aims for minimal marginal costs	Have varying marginal costs owing to long sales cycles and required support

Table 1 SaaS Business Model Types. Source Luoma et.al (2012)

5.2 Bundling and Aggregation

The bundling of SaaS offerings typically denotes an offer of several SaaS services (different in their functionality) that are provided as a whole – a bundle. No adaptation or coordination of the different services is involved. The main argument for buying is the aggressive pricing, e.g. the SaaS Marketplace offers a bundle of services that cost respectively X, Y and Z dollars per month for A dollars a month where $A < X+Y+Z$.

Aggregation of SaaS offerings is different – the SaaS marketplace offers a new service that consists of existing SaaS offerings. For example, the “E-Commerce Cloud” aggregated service offered by Asperado is an aggregation of an online shop service, payment provider service, fulfilment service and other optional services.

A service-oriented architecture (SOA) can facilitate aggregation and orchestration of a large number of services Stantchev & Malek (2011). It is considered a prerequisite for a successful cloud computing market with twofold implications. First, an organization that has already introduced SOA can easily integrate SaaS as part of their IT landscape, and second, SOA as part of the IT

landscape of the SaaS provider and of the SaaS marketplace can be the foundation for aggregated SaaS offerings by a marketplace or other intermediary.

5.3 Choice

There are several essential choices for SaaS marketplace owners when considering the business model they will provide and the mix of offers they will make. Brousseau and Pénard (2009) observe that when assembling the types of offers, a marketplace must choose between offering a narrow or a wide range. In the marketing method they must choose how they will select the offers, rating them according to criteria appropriate to the solution being offered, for example whether the customers will be prepared to pay directly or indirectly for the offers being of good quality. This recognises the search costs and quality filtering that a marketplace undertakes when assembling its offers. It must determine how it will recoup these costs in negotiation with the provider if customers do not demonstrate a willingness to pay for the service of prescribing the best offers.

In matching provider offers with customers, the marketplace seeks to minimise customer transaction costs when searching for offers, shortlisting and evaluating their trust in the chosen provider and marketplace. SaaS marketplaces minimise transaction costs by:

- attractive presentation and efficient organisation of information
- assembly of offers that appeal to customers
- information substitutes to increase customer trust: certification, partners with reputations, contractual guarantees
- communities that provide ratings and reviews

SaaS marketplaces also organise intermediaries such as trust certificate issuers. Their websites expose public APIs to integrate providers into their platform. This lowers marketplace, provider and customer transaction costs taking advantage of the scalability of SaaS.³

In developing their business model regarding matching, SaaS marketplace makers must also consider the market structure and how much competition they will accept. This strategy may be implemented through choices about whether and how to cross-subsidise each side of the market. It may also dictate how to organise the information that allows matching to occur and how they make public their matching process, e.g. will they allow information retrieval and matching to occur by publishing APIs?

5.4 SaaS Adoption Factors

In order to create value propositions for their target customers, SaaS marketplaces need to understand the issues surrounding the adoption for this new form of software delivery. Benlian et

³ (see Brousseau & Pénard, 2009)

al. (2009) surveyed a random selection of 5000 German firms, receiving valid responses from 297 IT executives seeking to understand their views on adopting SaaS. They found that if a system or application⁴ is less strategic to the business or is more standardised or there are lower technical and economic risks in outsourcing the application, then there was a higher probability of a SaaS solution being adopted. Thus SaaS office and collaboration applications were more likely to be adopted than ERP systems. The authors suggested providers of such systems strengthen their company branding and positioning, from one of pure supplier to that of strategic business partner, one who is prepared to share risk and fulfill commitments.⁵

Another important finding for SaaS marketplaces is that IT executive attitudes to SaaS were influenced considerably by expert opinions and peer pressure. They suggested engaging opinion-leaders and third parties such as associations and lobby groups that comment on new technology, "for example, they could offer their SaaS solution to influential opinion leaders for free with the aim to initiate a chain reaction".^{6 7}

They also observed that SaaS providers should seek to mitigate technical and economic risks by introducing relevant clauses in contracts and Service Level Agreements (SLA), in order to increase trust and minimise the opportunistic behaviour on both sides of the business relationship. SaaS marketplaces can use these insights as part of their marketing advice to their providers and in contracts they develop with providers and with customers.

Finally they observed that the size of a firm did not matter in relation to the attitude toward adopting SaaS - Small to Medium sized Businesses (SMB) and enterprises were equally likely to adopt SaaS.⁸

SaaS marketplaces must define in their business models if they will sell to corporate clients and partner with VARs, systems integrators and consultants that have the experience in selling to these clients. This would enable them to keep their self-service web presence and still promote their SaaS providers to a wide audience of customer types.

5.5 SaaS Risks and Opportunities

In a later study of SaaS risks and opportunities, Benlian and Hess (2011) developed further findings relevant for SaaS marketplaces and the providers they represent. In 2010⁹ they surveyed

⁴ the two are synonymously in business

⁵ (Benlian, Hess, & Buxmann, 2009 p367)

⁶ ibid p366

⁷ Note the use of chain reaction also discussed in Evans et.al (2007) as catalytic reaction

⁸ ibid p368

⁹ but published in 2011

CIOs of 2000 German firms and received 349 usable responses from 142 SaaS adopter companies and 207 non-adopter companies.

They observed that firms that had not yet adopted SaaS tended to over-estimate the Total Cost of Ownership (TCO) of SaaS and under-estimate the strategic and performance issues. They encouraged these non-adopters to compare their economic and performance evaluations with "a meaningful set of SaaS-adopting peers".¹⁰ SaaS marketplaces and providers should develop more material addressing TCO issues that will improve their pricing messages. Building on their 2009 findings about the value of expert and peer opinions, SaaS marketplaces and providers should seek reference customers and case studies, to reveal the value of the software implemented and so provide an extra level of connection and credibility.

Benlian and Hess (2011) developed further findings in relation to contracts, observing that SaaS marketplaces and providers should seek to eliminate security and performance risks. This could be achieved through contracts with SaaS providers in relation to "mandatory security standards (e.g. data encryption technologies and virtual private networks), penalties for data breaches or non-performance (for supplier-caused failures), or the inclusion of third parties to guarantee the availability and integrity of data (i.e., so-called "escrow services") and to safeguard the company against major business risks (e.g. bankruptcy)".¹¹ SaaS marketplaces will then be able to offer superior advice to providers in these areas and make better contracts that will in turn distinguish the marketplace in the eyes of customers.

5.6 Pricing

Lehmann et.al (2012) published research on the pricing of SaaS. Using the 1300 firms listed on the www.saas-showplace.com, they selected 259 that offered enterprise software (CRM, ERP, e-commerce, HR, marketing, PM, SCM) AND disclosed pricing information on the website.

Of the 259, 166 used some type of price metric. These metrics could be usage-dependent (e.g. per transaction, per memory required, per minute) or usage-independent (e.g. named user, per machine, number of CPUs, per customer/employee/supplier/land record stored, etc.) - representing a unit of usage even if the software is not actively used. (A more comprehensive breakdown of the elements of software pricing can be found in Lehmann and Buxmann (2009)).

They found that less than 10% offered usage-dependent pricing and because it is rarely applied, concluded that this supported their assumption that SaaS providers "preferred usage-independent pricing metrics in order to attain better results for sales forecasts and their revenue management"¹²

¹⁰ (Benlian & Hess, 2011 p244)

¹¹ *ibid*

¹² (Lehmann, Draibach, Buxmann, & Doersam, 2012 p12)

5.7 Financial Management

Many companies creating SaaS marketplaces have undertaken capital raising specifically to develop their new businesses. Some have used venture capital and it is relevant to consider how the venture capitalists themselves value SaaS companies. Bessemer Venture Partners (2009) published its “Six C’s of Cloud Finance” and these have been referenced by Churakova et al. (2010) and by Strømmen-Bakhtiar et al. (2011). They observed that cloud computing and thus SaaS has a recurring revenue model rather than the upfront costs, licence renewals and upgrades of perpetual software. Management, particularly with experience in perpetual software, should adapt their business models and practices accordingly. Another venture capitalist Evangelos Simoudis who controls a SaaS fund regularly uses these financial management terms in his blog to discuss the performance of his fund and the performance of the SaaS sector in general.¹³

The following abridged definitions of measures are of particular interest:

CMRR – Committed Monthly Recurring Revenue. In order to achieve better business visibility, most top performing Cloud companies focus on annual contract value (ACV) or monthly recurring revenue (MRR) - the combined value of all of the current recurring subscription revenue - instead of bookings. The authors recommend companies track the forward view of committed monthly recurring revenue (CMRR). The CMRR differs from the MRR in two ways: Firstly, it includes both “in production” recurring revenues of the customer and the signed contracts going into production. Secondly, it is reduced by “churn” which is the MRR expected to be lost from customers that are anticipated to be stopping service in the future. This single metric gives you the most pure forward view of the “steady state” revenue of the business based on all the known information today. This is the single most important metric for a cloud business to monitor, as the change in CMRR provides the clearest visibility into the health of any cloud business.

Cash Flow. Visibility of cashflow is critical for cloud businesses because the working capital requirements are higher and payment terms are often stretched out over the term of the contract. Given the high cost of capital for private cloud companies, executives can often offer slight MRR discounts to customers in exchange for quarterly or annual pre- payment terms and provide incentives for their sales force accordingly.

CAC Ratio - Customer Acquisition Cost Ratio. The CAC ratio determines how much of a company’s sales and marketing investment is paid back within a year: a CAC ratio of 0.5, for example, means that half of the company’s investment is paid back per year, so it is a two-year payback period.

CPipe – CMRR Pipeline. The company sales mindset must focus on CMRR – including compensation plans, reporting and pipeline. Based on business size and average sales cycles,

¹³ (see Simoudis, 2012)

companies must determine which pipeline time and stages are most appropriate and whether to show the pipeline as a total number or a factored number - consistency and transparency are critical. In the long run, this should become a reliable leading indicator for elements of CMRR, cash flow and CAC.

Churn. It's very difficult and expensive to grow subscription businesses if companies have moderate customer churn and prohibitive if companies' churn is high. Companies need to track churn in detail from a lost customers perspective as well as the amount of lost CMRR. While perpetual software enabled large enterprise software companies to coast on the back of past sales, cloud businesses cannot fail or the customer will simply cease using the software, regardless of the contract terms. The top performing cloud companies typically achieve annual customer renewal rates above 90%, with most of the churn due to bankruptcy or acquisitions and over 100% renewals on a dollar value basis due to up-sells into this installed base.

CLTV Customer LifeTime Value. The CLTV is the net present value of the recurring profit streams of a given customer less the acquisition cost. A profitable business will have a positive CLTV.

Many SaaS applications have monthly renewals, low lock-in barriers, low switching costs and face competition from providers globally. These six measures enable SaaS marketplaces to be better informed at operational, tactical and strategic levels. They also allow the development of meaningful measures that can be built into contracts and for documenting performance for both SaaS marketplaces and providers.

5.8 Two-Sided Markets

Filistrucchi et al. (2012) reviewed earlier work by Evans (2003), Rysman (2009), Evans and Noel (2005), Evans and Schmalensee (2007, 2008) and Rochet and Tirole (2003, 2006) on the definition of two-sided markets proposing that the "identifying features are the existence of a firm selling more than one product or service, the presence of two distinct groups of buyers, each buying different products or services, the interdependency between their demands and the lack of a complete pass-through in case of transaction markets."¹⁴ Filistrucchi et.al are particularly interested in two-sided marketplaces from the perspective of anti-trust/competition law and so the definition is approached with some care because the findings for a business found to be in breach of such laws naturally have serious consequences.

A SaaS marketplace seeks to match customers and providers and in so doing, an interdependency is created because a market needs both buyers and sellers. The type of SaaS marketplace business model dictates how the marketplace attracts and retains customers but ultimately all SaaS marketplaces attempt to offer providers access to as many potential customers as possible. If pass-

¹⁴ (Filistrucchi, Geradin, & Van Damme, 2012 p9)

through occurred, a SaaS marketplace visitor would directly connect to the provider once they had selected an offer from the marketplace. However most SaaS marketplaces act in one of two different ways, either by holding the billing relationship with the customer, or by adding a cookie to the browser of the marketplace visitor as they click through to the provider's website for which they receive revenue.

Direct and indirect network effects between customers and providers can further define the interdependency of two-sided marketplaces. Consumers may desire a product more if similar consumers use that product as well, known as a positive direct network effect¹⁵, e.g. document collaboration in real time using Google Docs. As more people value this feature they will acquire Google Docs to collaborate with others. A negative direct network effect occurs where consumers desire a product less if similar consumers use it, e.g. Facebook rival Path is limited to 50 friends to stop the congestion and privacy issues of large social networks. One type of economic agent may value a product more if more of another group of economic agents uses that product as well. This is known as a positive indirect network effect. For SaaS marketplaces, customers may value the marketplace more highly if it brings together many offers that may interest them and/or if they secure marquee or highly valued providers, e.g. customers choose Amazon over rival platforms because of the enormous range of products they offer. Negative indirect network effects occur when one "type of economic agent harms another type of economic agent"¹⁶, with advertising being the most obvious example. Consumers may tolerate advertising if the platform provides other content such as user-generated reviews and ratings.

In conclusion, the SaaS marketplace tries to use positive direct and indirect network effects to facilitate matching customers with providers thereby lowering their transaction costs compared to making a match without the marketplace.¹⁷

5.9 Marketplace Ignition

In this section several works of Evans alone and Evans and Schmalensee are reviewed as they explore, how two-sided marketplaces can achieve critical mass igniting the interactions of the two sides and develop into successful businesses.

Evans (2009) provides relevant insights for SaaS marketplaces, a form of two-sided market that can also be multi-sided. He observes that two-sided markets¹⁸ must secure enough customers on both sides and in the right proportions, to give enough value to either group and to attain sustainable

¹⁵ (Evans D. S., 2009 p12)

¹⁶ *ibid*

¹⁷ (see Evans & Schmalensee, 2007)

¹⁸ (Evans D. S., 2009 p5)

growth. They must achieve secure critical mass to ignite the growth of their platforms; the failure to achieve critical mass quickly results in the implosion of the platform.¹⁹

A SaaS marketplace acts as an economic catalyst by bringing together customers and providers and getting them to interact. This creates value as it reduces the transaction costs for both sides by reducing their search costs in finding each other, in determining if they are a good match and in making an exchange. For Evans the perceived value must be significant enough to justify the cost and risk in building the SaaS marketplace. There must also be sufficient perceived value for the marketplace to finance incentives/ subsidies to one or both sides to join the marketplace. Entrepreneurs who discover how to create this value will achieve a catalytic reaction and the significant growth that comes from a platform business.²⁰

Identify the Platform Community	Establish a Pricing Structure	Design the Catalyst for Success	Focus on Profitability	Compete Strategically With Other Catalysts	Experiment and Evolve
<ul style="list-style-type: none"> • Identify distinct groups who need each other • Determine why and how much they need each other • Evaluate who else is serving the community • Compare multi-sided business model with a single-sided one 	<ul style="list-style-type: none"> • Set separate prices for access and usage • Set prices to balance demand from the two sides • Price to grow slowly – at first • Pay customers to belong – sometimes • Price for long-term profits 	<ul style="list-style-type: none"> • Attract multiple customer groups that need each other • Promote interactions • Minimize transaction costs • Design for evolution 	<ul style="list-style-type: none"> • Study industry history • Use forecasts to enhance profitability • Anticipate competitor actions • Align interests internally and externally 	<ul style="list-style-type: none"> • Understand the dynamics of catalyst competition • Look for competition from different business models • Leverage to attack • Consider cooperation 	<ul style="list-style-type: none"> • Know when to be first – and when to follow • Control growth • Protect your back • Plan for what's next • Look out for the cops
Find Out Who Needs Whom—and Why	Shape Participation and Maximize Profits	Draw Customers and Facilitate Interactions	Visualize Path Toward Long-Term Profit	Challenge Existing Catalysts and React to New Catalyst Threats	Pursue Evolutionary Strategy for Growth

Figure 1 Catalyst Framework. Source: Evans and Schmalensee (2007)

The framework of Evans and Schmalensee (2007) shown in Error! Reference source not found. is referenced in several of their works and could be applied directly to SaaS marketplaces to achieve this catalytic reaction.

¹⁹ (Evans D. S., 2009 p5)

²⁰ ibid

5.10 Getting to Ignition

SaaS marketplaces, in promoting new ideas, techniques and practices in the form of SaaS can accelerate the introduction or diffusion of innovation into firms. As SaaS is a new form of software delivery, marketplaces educate first-time adopters about SaaS benefits in general and help them to choose the particular solution they need. SaaS marketplaces that capture user reviews, ratings, Q&A and comments accelerate the rate of knowledge transfer to visitors and enable them to become customers faster through offering free trials. As software is an experience good, the best way for a customer to decide if the SaaS offer they have chosen solves their problem is to try it, as reviews and ratings alone are not sufficient. SaaS marketplaces, especially those with many offers and that can also generate recommendations, are able to match the profiles of current users with the profiles of potential customers to provide a greater opportunity for matching, e.g. ten other pet shop owners in Canada also chose this accounting package.

Business Model	Getting to Ignition	Example
Sequential entry	Get one side on board first, then use it to get the other side on board	OpenTable
Simultaneous entry	The platform is opened up right away with both sides on board, usually done when there is an obvious problem to be solved and it is simply making both sides aware of the business proposition that gets both sides to show up at the same time.	Facebook
Static pre-commitment strategy	Make credible commitment to each side that the other side will show up	Diners Club
Dynamic pre-commitment strategy	Have both sides in play by approaching one side and getting them to agree to show up if there is evidence that the other side is on board. Then, go to the other side and promise that the side they are most interested in is on board.	Xbox
Basic zigzag	Incremental growth. Engage in a variety of strategies to get one side and then the other to join the platform over a space of time	YouTube
Marquee strategy	Secure a small number of really influential players on one side or both.	Mall of America
Zigzag with self supply	Launch platform by initially providing one side yourself.	Palm Pilot
Partner with another platform	Partner with a platform that has the most critical side of your platform already on board.	Android

Business Model	Getting to Ignition	Example
Developer strategy	Create APIs and let developers access the platform to create value for the platform's customers	PayPal IX

Table 2 Strategic Framework for Ignition. Source: Evans (2012)

SaaS marketplaces provide innovators, or early adopters with many resources and opportunities to find the SaaS solution they need. Platforms can achieve ignition when early adopters communicate their success in solving their problem using the SaaS marketplace. Achieving a positive network effect is possible if this communication is captured either on the marketplace or via social media. Friends, fans and followers all learn of the marketplace, visit it for themselves and as they too become customers its growth accelerates. If a marketplace is able to develop a significant customer base, they will attract more providers or better still, more providers that customers say they want, thus achieving the positive indirect network effect.

These are applied to SaaS marketplaces later in this study.

As part of their Strategic Framework for Ignition, Evans and Schmalensee (2007) developed a set of methods that other platform businesses have used to solve the coordination problems of reaching critical mass that are summarised in Table 2. SaaS marketplaces can benefit from the examples of these businesses. The Evans' business models (coordination solutions) will be applied to SaaS marketplaces in the following section.

6 Types of SaaS Marketplaces

As this is a newly developing field there are no single or definitive sources of SaaS marketplaces from which to generate a list of potential interview partners for this study. During this search a set of different types of marketplaces were considered. From these, a representative sample was engaged for interview.

The search for marketplaces was limited to those selling business oriented applications. Note this is not pure business to business as many applications serve individuals in their personal and professional lives and providers sometimes offer tiered bundles of services at different prices to match those differing needs their applications may fulfill.

As part of the research, a review of the available SaaS marketplaces was undertaken. Scanning the internet for research purposes and for interview partners, it is possible to observe different types of marketplaces. These include platforms that offer Marketplaces-as-a-Service, marketplaces that have a close relationship with their suppliers through billing integration or that act as a referral and receive revenue per click or per sale.

Platform: A Marketplace-as-a-Service offers a platform of value-added features as well as a network of providers. It usually does not have retail customers but concentrates on firms with large

customer bases to enable them to add a complimentary new line of business. This allows it to quickly deliver to its providers a huge pool of potential customers, minimising its CAC. For customers, it provides stickiness through the convenience of its management features, single billing and the range of offers available.

Meta-marketplace: This acts as a comprehensive catalogue of the available SaaS offers for their chosen domains. Some firms will choose a niche such as healthcare while others try to cover as many categories as possible. Their value proposition may be one of consumer education and market coverage.

Affiliate: Promote SaaS providers indirectly to VARs and systems integrators and marketplaces. They may also promote the providers as a network.

Hosted: A firm, usually with a large existing customer base, that wants to add a SaaS marketplace as a new line of business. The firm may be an Internet service provider (ISP) or telco, or an in a different industry such as financial services or online retailing. The platform provides a catalogue of SaaS offers and customer management features. The firm integrates the platform's features into its own systems to provide convenience for customers to discover, purchase and manage SaaS offers.

Single: An independent marketplace that operates through selecting its own SaaS offers from affiliate networks or direct from SaaS providers. It may pursue a single strategy or niche to build a customer base and provide offers directly allowing customers to self-select if this marketplace suits their needs.

Marketplace Type	Evans Business Model	Examples
Platform	Developer Developer + self-supply	Jamcracker, AppDirect, Etelos, Parallels
Meta-marketplace	Basic zig zag	GetApp
Affiliate	Basic zig zag	SaaSMax, IngramMicroCloud
Hosted	Partner another platform	Luxcloud, DeutscheTelekom, SaaSMarkets
Single	Marquee	Verecloud
Vendor	Developer	Salesforce AppExchange, Informatica Marketplace, Google Apps Marketplace
Internal	Partner another platform	DHL (Jamcracker)

Table 2 SaaS Marketplace Types, their business models and examples

Vendor: A firm that already has IaaS and/or SaaS offers developers features to utilise their services or extend their core products. This enables customers to extend the product and create tighter integration to their existing systems. The vendor benefits in that the community extends the products and services faster than the vendor could alone. It promotes platform stickiness through high levels of integration.

Internal: A firm provides its own catalogue of SaaS from providers it has selected in a centralised and managed fashion. It may use a Platform and benefit from its integration features to create tighter data and financial controls and returning centralised control to IT.

7 Interviews: Results and Discussion

Interviews conducted between 17th July and 14th August 2012 were recorded and transcripts created, from which the quotes were selected.

The results in this section are presented according to topic – choice, bundling, pricing, capital, marketplace, implementation and catalysts. The interviewee quotes shown in italics have been kept anonymous as a condition of interview.

7.1 Choice: Results and Interpretation

We don't want to overwhelm the customer with too much choice

We provide the customer with the most choice so they can decide for themselves

We have done the hard work for you, we picked some vendors that are really good in these spaces

The choice of offers depends on the business model of the marketplace as well as what offers they have been able to negotiate. This recognises that at a given point in time a marketplace may not be able to negotiate with every provider it chooses. Some providers will not even sell via marketplaces while other providers have already negotiated representation with other marketplaces and other channels. It is also interesting to observe from the marketplace websites a lack of transparent or systematic approaches to the ranking and rating of the available offers.

The marketplaces available today exist in the range suggested by Brousseau et.al (2009), ranging from a few specific offers through to the meta-marketplaces with thousands of offers. With a meta-marketplace comes considerable choice and some 'pollution', as buyers must use the ratings, stars and reviews provided to find offers to best meet their needs.

7.2 Bundling and Aggregation: Results and Interpretation

Interviewees used the term 'bundling' in two different contexts. Bundling could mean a collection of apps treated as a unit that could be easily managed for a customer. Bundling was also used in terms of discounting applied to the promotion or purchase of more than one app at the same time. The following statements from the interviews contrast the different viewpoints:

We prefer to let the customer make their bundles

Our platform allows you to work with a bundle of apps

I can foresee a package with voice, data, email, CRM, storage, collaboration ... could work

Günther et.al (2007) observed, “users are not willing to pay for aggregation of web-services by a third party”. Perhaps this is the reason another interviewee stated, “we let customers create their own bundles” as it simplifies marketplace management in the selection of offers to bundle and in predicting customer expectations of the discount applied to the bundle.

We could also not detect particular trends in bundling. It must be remembered that many of these marketplaces are still refining their offers.

During the preparation of the paper no SaaS marketplaces was observed to offer aggregation or orchestration, only discrete offers. This could be interpreted to say that SaaS marketplaces have defined their matchmaking and commercial role and will leave the implementation and integration to the customer.

7.3 Pricing: Results and Interpretation

Interviewees were not questioned about usage-dependent or usage-independent pricing. However they were asked to look at the future of pricing for SaaS. Menychtas, Gatzoura, and Varvarigou (2011) and Rohitratana and Altmann (2012) and other authors have proposed dynamic pricing alternatives for cloud-based services. They propose different forms of auctions with potential customers able to make offers in an SLA containing functional and non-functional aspects. This future-oriented question asked interviewees how customers might react to such a system.

The value right now for customers is moving from CAPEX to OPEX and being able to fix budgets [for SaaS]

We already offer tiered pricing

We are able to offer very flexible pricing if the customer wants

I could foresee the development of more complex price plans just as [mobile/cell] phone plans have become more complex

This set of responses is a good indicator of the state of SaaS and its marketplaces. As Lehmann et.al (2012) show, usage-independent pricing is dominant and favoured by customers, especially for its simplicity. As the market matures, SaaS marketplaces, especially those hosted by telcos may offer more complex price plans.

7.4 Capital: Results and Interpretation

Interviewees were not asked questions about the financial aspects of their firms. However the literature presented on measuring and managing recurring revenue businesses will give insight into the health of the business and provide hard data for use in negotiation.

SaaS marketplaces with sufficiently large portfolios would also benefit from portfolio management practices found in IT governance and funds management as they seek to balance their offers and profitability.

7.5 Marketplace Marketing Power: Results and Interpretation

Lehmann et.al (2012) observe that of the 300 US-based offers of SaaS in their survey, most providers offer usage-independent pricing. They claim this to be due to providers needing to obtain better results in sales forecasts and revenue management. Smaller providers almost exclusively placed the price on the homepage. Larger providers, those with a higher reputation did not do so. The implication for SaaS Marketplaces is that the provider landing page may be critical to the presentation of the value proposition for providers. Marketplaces need to be mindful when distilling provider features into standard formats for easy comparison that the impact of the provider's offer is not lost.

7.6 Implementation: Results and Interpretation

Marketplace platforms have adopted different strategies to deliver features that provide value to customers. Parallels created the APS standard (www.apsstandard.org) and SaaS providers port their applications to this standard, giving Parallels a catalogue of offers for any business buying its Marketplace as a Service host infrastructure product.

AppDirect created a set of APIs for its Marketplace as a Service and providers write to these interfaces. Both require the SaaS provider to write code to integrate. Parallels appear to have seeded its marketplace with open-source software ported to the APS standard. This may appeal to their traditional market of web-hosting companies and ISPs. AppDirect, by contrast, has a range of different types of apps. Both Parallels and AppDirect are competitors and because of their differing portfolios, they give prospective providers significantly different perceptions about who would best represent them. Parallels appear to follow its traditional web hosting customers market while AppDirect looks to pursue any firm with a large customer base.

7.7 Marketplace Roles: Results and Interpretation

The results of these interviews point out that a marketplace can have a variety of roles depending on its underlying business model. A SaaS marketplace can be seen as a pure 'distribution platform'. In this case, the marketplace can be a part of an existing organisation with a large customer base or can undertake marketing activities to attract customers. In the role as 'marketing advisor', the marketplace can “...*help them distinguish [differentiate] between what they really have to offer*”.

One main role of a SaaS marketplace can be observed in 'quality assurance and evaluation'. In this case, the marketplace adds value for the provider as a distribution platform. It may also provide a platform of management services. A SaaS marketplace can also be observed in the role of “*user*”.

management, billing, single sign-on, provisioning". In this case, the SaaS marketplace may provide first-line technical support as well as an automated recommendation service.

These features allow a marketplace to attract and retain customers once a buyer has satisfied their trust and information needs and made an initial purchase. If the buyer is undertaking a pilot and now seeks to roll out across the organisation, they will need access management features to grant differing permissions to users. Once a buyer makes more than one purchase they will need single sign on (SSO), subscription and billing management features to minimise administration and security overheads.

From the provider perspective, a platform with these features is attractive because of its growing customer base and lower churn. It will also have more detailed sales information with which to demonstrate success to providers.

In summary a SaaS Marketplace can be observed to provide a number of features for the customer: SSO, provisioning, single billing, user management. For a firm buying a Marketplace as a Service the benefits could be summarised as: accessing an established catalogue of providers, billing, provisioning, management features, quickly installing a new line of business, access to an international network of providers and ease of attracting new SaaS providers.

8 Conclusions

In the coming years we will find increasing competition in the SaaS market. For the identification and evaluation of available SaaS offerings, IT departments need the necessary knowledge based on short-term training courses and tools. SaaS marketplaces are required to create uniform standards for assessing SaaS offerings. Overall, we have discovered discrepancies between the theoretical view of an electronic marketplace (particularly SaaS marketplaces) and the real world. The appeal of such marketplaces in for business is still limited but can be improved if marketplaces develop a strategic partner attitude and together with providers can develop better contracts to mitigate risks.

The classification of SaaS marketplaces is still unstable and will probably evolve in the future. At present we see entrepreneurs trying new business models to discover what works. The Cloud-computing market needs an accepted classification or taxonomy for SaaS offerings. As stated, this is a rapidly changing area and not all business models may be effective in spite of increasing demand for SaaS. Companies have to test the observation that marketplaces may alter the provider's landing page impact in converting customers, as this has important implications for SaaS providers and marketplaces. Finally, companies also must evaluate customer responses to pricing differences between providers and marketplaces to discover if the valued-added services of marketplaces can command a premium or result in customer stickiness.

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