Transforming Software Business Models into Business Processes

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Abstract: Changed business models, such as induced by Software-as-a-Service, require an effective implementation in a firm's organization. This study clarifies the relation between business models as an implementation of a company's strategy, and business processes, as an abstraction of a company's operations. The presented transformation framework provides specific meaning to the industrial setting of a software vendor morphing to a SaaS model. Both underlying concepts, the business model and the value chain, as a coarse-grained view on business processes, stem from software industry research. The explorative findings cover a detailed description of the transformation framework as well as an exemplary expert survey that can serve as a reference for software firm decision makers. Thus, the study provides profound insights into the potential operational impacts of business model changes.

1 INTRODUCTION

Companies are continuously striving for more agility. One of the challenges is the rapid translation of changes in a company's strategy to its operations. For example, the introduction of Business ByDesign required SAP to revise its traditional business model (BM). It was SAP's first major product designed as a SaaS solution and it required changes in the firm's operational processes, such as, for instance, in the volume provisioning and management of multi-tenant systems. Finally, the release to market was postponed as the firm could not cope with the operational challenges (Beal, 2008). Thus, in the light of an increasing shift towards SaaS solutions, software firms such as SAP need to be supported in analyzing the impact of BM innovations on their operations.

Unfortunately, a gap between business strategy and business processes (BPs) hampers companies' agility. Al-Debei and Avison (2010) propose to close this gap with the BM concept, which can be used to "translate the broad strategy into more specific business architectural, co-operational, value propositional, and financial arrangements".

Building upon that claim the main goal of this paper is to clarify the relation between BMs and BPs, based on literature review and inductive reasoning. Throughout the study, a software firm morphing from an on-premise to a SaaS solution provider will be used as an exemplary showcase. The structure of this paper is as follows. Section 2 provides a background on transformation concepts and the associated challenges. In section 3, a framework supporting the transformation from BMs to BPs for software businesses is presented. Section 4 prioritizes areas that are of particular importance in the BM to BP transformation of a fictional software company that changes its business model. Reflecting the huge number of combinatorial scenarios and the related effort to analyze each of them, we propose a content enriched transformation matrix that can serve as a reference model. It can support software firm decision makers to evaluate BM options. Section 5, finally, concludes the paper.

2 RELATED WORK

The transformation of BMs into BPs relates to the research field of enterprise architecture (EA), which aims at modelling a firm's most important artifacts and their mutual interdependencies. In 2008, Aier, et al. provided a systematic state of the art review covering related literature and findings from entrepreneurial praxis. Though a lot of research has been done in this area, they show that publications follow diverse perspectives. To differentiate and classify the various approaches, an analysis framework based on Winter

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and Fischer (2007) is proposed. It disaggregates the enterprise architecture into five layers: Strategy, Organization, Integration, Software/Data, and IT-Infrastructure. Surprisingly, Aier et al. (2008) conclude that aspects on the strategy layer are only addressed by few researchers (Aier and Schönherr, 2006); (Braun and Winter, 2007).

In addition to the research conducted in the EA domain, the BM can be considered as a concept that addresses the EA strategy layer. According to a state of the art review by Morris et al. (2005) a BM encourages the entrepreneur to (a) conceptualize the venture as an interrelated set of strategic choices; (b) seek complementary relationships among elements through unique combinations; (c) develop activity sets around a logical framework; and (d) ensure consistency between elements of strategy, architecture, economics, growth, and exit intentions. Although Morris et al. (2005) identify a need for a translation of a BM into operational decisions, they do not describe explicitly how to cascade a BM into operations.

Further approaches transforming BMs into operations are revealed by Burkhart et al. (2011), Brews and Tucci (2003), and Van Putten and Schief (2011). Though a lot of research has been done in the EA-field, artifacts on the strategy level and their transformation into operations have not yet been addressed sufficiently. Researchers from the BM domain provide generic approaches, but most often lack specific guidance that can be used in practice. Referring to the EA state-of-art literature review by Aier et al. (2008), our study is contributing to the alignment of the the first two layers: strategy and organization.

3 TRANSFORMATION FRAMEWORK

3.1 BM of a Software Firm

While several definitions of BMs can be found, no established standard exist so far (Burkhart et al., 2011). Approaches either define a taxonomy, allowing to classify a BM based on a finite number of BM types, or they provide a reference model, allowing to describe an infinite number of BMs. Examples of such BM conceptualizations are REA (Geertsa and McCarthy, 2002), and e3-value (Gordijn and Akkermans, 2001). Beyond generic BM concepts, industry specific ones are proposed. For the software industry, various conceptualizations as well as taxonomies are available. Thereof, the conceptualization proposed by Schief and Buxmann (2012) is highly comprehensive and builds upon the economic properties of the software industry. Their BM concept spans three layers. The first layer consists of five groups: Strategy, Revenue, Upstream, Downstream, and Usage. On the second layer, each group comprises four elements. Thus, 20 elements serve as the conceptual building blocks of the BM. The third layer, finally, contains pre-defined manifestations for each element.

3.2 Value Chain of a Software Firm

The concept of the value chain was initially introduced by Porter (1985) as a tool for developing and sustaining competitive primary activities. By disaggregating a firm into its various activities, the value chain model allows to describe the activities, i.e. operations or BPs, performed by a firm. We hence suggest that the hierarchical decomposition of a firm's activities starts with the value chain model. The coarse-grained activities comprise finer-grained activities, which can be described and implemented as BPs.

Pussep et al. (2011) propose a unified value chain concept for the software industry. This value chain contains typical activities performed by software firms. The software value chain comprises eleven activities: product research, component procurement, product development, user documentation, production and packaging, marketing, implementation, training and certification, maintenance and support, operations, and replacement. For our BM to BP transformation model, we adapt the software value chain by removing the activity "user documentation" and replacing it by separating the activity "maintenance and support" into two distinct activities. The rationale behind is that we judge maintenance and support as two very major activities with respect to the daily operations of a software firm.

3.3 Framework

With a few exceptions (Al-Debei and Avison, 2010); (MacInnes, 2005), most literature has taken a static perspective on BMs. The implicit assumption is that BM choices are rarely adjusted. However, BMs often do not remain steady over time, for instance, in order to keep in line with changing environments (Afuah and Tucci, 2003). As a result, de Reuver, Bouwman and MacInnes (2007) argue that BMs need to be aligned with external changes during all phases from development to exploitation. In our transformation process (Figure 1) we assume that a strategic trigger (e.g., the rise of SaaS) calls for a review of one or multiple BM elements within a present BM configu-

ration. As soon as the affected BM elements are identified, the challenge is to estimate the impact of alternative elements on operations. The BM concept serves as the independent variable and the value chain concept, representing operational BPs, as the dependent variable. The corresponding transformation matrix (Appendix) is hence built upon both concepts and shows their interdependencies. To ease the understanding of the relations and to cope with complexity arising by combinatory change scenarios, we propose analyzing the impact on the affected BPs for each affected BM element individually. That means, we discuss the relations for each BM element, every time assuming a change of that element only while keeping all other elements fixed. Based on this foundation, finally, potential risks, costs, and benefits associated with a certain BM change scenario can be derived. Notably, following the notions of business process modeling, we investigate the potential impact on various business process attributes (e.g. associated activities, roles, information, systems etc.) that sum up to a business process profile. For each value chain activity, we investigate the extent to which the structure, i.e. the BP profile of the associated BPs, is likely to change.

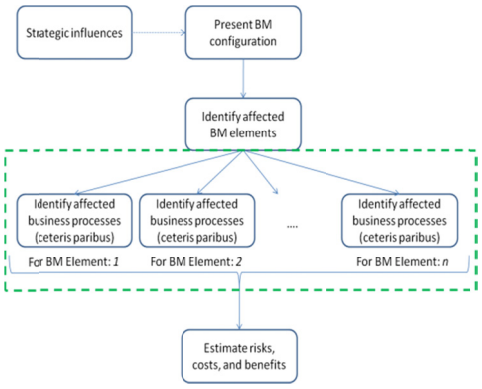

Figure 1: A process for BM to BP transformation.

As a fictional change example of one BM element, we assume that the operating model is changed from an on-premise to a SaaS model. The impact on the value chain activity "development" is supposed to be remarkable. BPs that are associated to this activity are highly likely to change. For instance, the software design, development, and testing processes need to reflect a multi tenancy concept to allow running multiple customers on one system.

4 TRANSFORMATION FOCUS AREAS

4.1 Method

By looking at changes in BM elements' manifestations as the independent variable, we open up a vast space for analysis. Not considering multiple manifestations for a single BM element, $2.6*10^{12}$ potential BMs could be analyzed with regards to impact of element changes on each of the 11 value chain activities. As this is not viable, we restrict our analysis to one exemplary starting scenario. The BM that is selected as a starting point for the analysis depicts a very typical software company that develops standard application software in-house, sells licenses to its corporate customers, and generates additional revenue through support options and upgrades. The complete set of BM manifestations is indicated by a striped background in the Appendix. With the starting point fixed, the eleven value chain activities can be influenced by 75 possible changes in BM manifestations. This leads to 825 required estimates of change impact – a number that is feasible to obtain expert opinions on. The impact of an isolated BM element change on the BPs in a certain value chain activity was evaluated on a 5-point scale reaching from 0 "no process changes needed" to 5 "full changes and new process required".

We asked a sample of three experts for their evaluation of change impact. Their software industry experience accumulates to more than 20 years in different value chain areas such as research, development, marketing, consulting, and support. The process to arrive at a single transformation matrix was derived from the Delphi method (Linstone, 1975), with the goal to arrive at a consensual end result (Häder, 2000). A risk-averse approach was chosen for both, judgment and aggregation, to avoid underestimating any impact. The analysis process took three rounds: *1. Independent assessment of change impact.* For each BM element, the change from its starting manifestation to a potential new manifestation was evaluated in terms of process impact per value chain activity. *2. Pair-wise comparison of the resulting matrices.* The results of round 1 were distributed among the experts, with cells highlighted that showed a cross-expert deviation in estimates of more than one scale-point. Subsequently, an individual re-assessment of previous estimates was performed. *3. Joint discussion and resolution of remaining differences.* A group discussion focusing on remaining cells with a deviation larger than one

was used to exchange arguments and rationales for certain ratings. Individual matrices were adjusted during the discussion, so that these remaining major differences could be resolved.

The three individual matrices resulting from round 3 were combined into the final transformation matrix by transferring the highest estimate given for each cell.

4.2 Results and Discussion

The resulting matrix, which exhibits the influence of BM element changes on a company's process structure in form of a heat map (Appendix). Overall, an isolated change of a single BM element results in "complete" or "high" effects on the process structure in 20.6% of cases (Figure 2). The corresponding BM elements and BP activities should receive highest attention when planning and implementing BM changes. It is remarkable, though, that more than half (53.5%) of the possible BM element changes have no or low impact on the process structure in a certain area. Thus, it is worthwhile to focus attention on those areas that feature higher change sensitivity.

Category	Occurrence	Share
4 – Complete	25	3.0%
3 – High	145	17.6%
2 – Medium	214	25.9%
1 – Low	200	24.3%
0 – None	241	29.2%
	825	100.0%

Figure 2: Aggregated results of transformation matrix – change sensitivity.

Strong dependencies exist in areas where "upstream", "downstream", and "usage"-related BM elements meet related value chain activities. Yet, cross-dependencies between those blocks exist as well. Most prominently, a change of the operating model on-premise to on-demand causes major changes to the "upstream" product development and packaging processes. Clearly, the existing processes in these areas have to undergo major changes to reflect the new SaaS delivery model. Stronger relationships than the operating model decision are only found between two more strategic BM elements and the BP structure (see Figure 3):

Product Portfolio changes have a disruptive effect on all processes when the company decides to shift its main focus from products to services. Value Chain Coverage – the "make, ally, or buy" decision – can also have massive consequences for a company's entire process structure.

Most/least influencing BM elements [# of activities impacted „complete" or „high"]	
1	Product Portfolio (11)
	Value Chain Coverage (11)
3	Operating Model (7)
…..	
17	Pricing Model (1)
	Technical Platform (1)
	Target Customer Type (1)
	Support Model (1)

Figure 3: Transformation sensitivity of BM elements.

Most/least sensitive BP activities [# of elements affecting „complete" or „high"]	
1	Product Development (11)
	Marketing (11)
3	Implementation (10)
…..	
8	Product Research (5)
	Component Procurement (5)
10	Training & Certification (4)
	Replacement (4)

Figure 4: Transformation sensitivity of BP activities.

Another interesting aspect can be found from looking at those BP activities that are most strongly influenced by BM changes (Figure 4): product development, marketing, and implementation. Since the latter two activities frequently involve partners, those partners will also be strongly affected by changes to related BM elements.

The above findings show the practical relevance of the proposed transformation matrix. As the (so far separate) entities BM and BP are now linked by the transformation matrix, a new "tool chain" for the impact analysis of strategic decisions becomes available. Once the strategic decision, such as the introduction of a new SaaS offering, has been translated into required BM changes, the impact on the company's processes are immediately visible. The transformation matrix illustrates that this decision leads to major changes, and thus challenges, to processes in the development and operations areas – which were exactly the areas that caused the delay in SAP's new SaaS offering (Beal, 2008). As this example shows, the matrix allows decision makers to identify which parts of the organization would be affected by a strategic decision and, in a second step, which consequences in terms of change effort its implementtation would mean. Feeding back these results into the strategy planning process should lead to more informed decisions and more realistic timelines.

4.3 Limitations

The straightforwardness of the proposed model

comes at the price of some limitations, the first and foremost being its inherent industry focus. By basing the model on the software industry BM and value chain concepts, the results cannot be transferred to other industries.

The assumption of the *ceteris paribus* condition when evaluating change impact is another simplification. The model does not allow conclusions about the combined effect of simultaneous changes to two or more BM elements.

Lastly, the focus on effects on business process attributes tends to neglect "soft" effects of BM changes; dependencies such as emerging training requirements, HR consequences, or organizational resistance are not considered.

5 CONCLUSIONS

The rising importance of Software-as-a-Service challenges software firms' BMs. This article develops a transformation framework to translate BM challenges into firms' operations. The framework allows the user to describe, analyze, and simulate the impact of BM changes on BPs. This link between strategic decisions and a company's operations is extremely valuable for fast-moving industries such as the software industry. Thus, it contributes to both, to the investigation of changes associated to SaaS and to the challenges addressed by the research in the enterprise architecture field.

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APPENDIX

Business Model		Value Chain Activities										
Element	Manifestation (as is)	Product Research	Component Procurement	Product Development	Production & Packaging	Marketing	Implementation	Training & Certification	Operations	Maintenance	Support	Replacement
Investment Horizon		**4 - Complete**	**2 - Medium**	**2 - Medium**	**0 - None**	**3 - High**	**2 - Medium**	**1 - Low**	**2 - Medium**	**1 - Low**	**1 - Low**	**3 - High**
	Subsidence Model	0 - None	1 - Low	0 - None	0 - None	1 - Low	0 - None	0 - None	0 - None	0 - None	0 - None	0 - None
	Income Model											
	Growth Model	1 - Low	1 - Low	1 - Low	0 - None	1 - Low	0 - None	0 - None	0 - None	0 - None	0 - None	0 - None
	Speculative Model	4 - Complete	2 - Medium	2 - Medium	0 - None	3 - High	2 - Medium	1 - Low	2 - Medium	1 - Low	1 - Low	3 - High
	Social Model	1 - Low	2 - Medium	2 - Medium	0 - None	3 - High	0 - None	0 - None	0 - None	1 - Low	0 - None	1 - Low
	Cross Finance	0 - None	1 - Low	0 - None	0 - None	2 - Medium	0 - None	0 - None	0 - None	1 - Low	0 - None	0 - None
Unique Selling Proposition		**2 - Medium**	**3 - High**	**2 - Medium**	**2 - Medium**	**3 - High**	**3 - High**	**2 - Medium**	**3 - High**	**3 - High**	**3 - High**	**2 - Medium**
	Quality	2 - Medium	2 - Medium	2 - Medium	1 - Low	1 - Low	2 - Medium	1 - Low	2 - Medium	3 - High	2 - Medium	1 - Low
	Features											
	Innovation Leadership	2 - Medium	3 - High	2 - Medium	0 - None	2 - Medium	3 - High	2 - Medium	3 - High	2 - Medium	3 - High	2 - Medium
	Efficiency	1 - Low	3 - High	2 - Medium	2 - Medium	1 - Low	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium
	Intimate Customer Relationship	2 - Medium	0 - None	1 - Low	0 - None	3 - High	3 - High	1 - Low	3 - High	2 - Medium	3 - High	2 - Medium
	Network Leverage	2 - Medium	0 - None	1 - Low	1 - Low	3 - High	2 - Medium	0 - None	3 - High	2 - Medium	1 - Low	2 - Medium
	One Stop Shopping	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	2 - Medium	0 - None	3 - High	1 - Low	1 - Low	2 - Medium
Product Portfolio		**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**
	Hardware Control	2 - Medium	2 - Medium	3 - High	3 - High	2 - Medium	2 - Medium	1 - Low	0 - None	3 - High	2 - Medium	2 - Medium
	System Software	1 - Low	1 - Low	3 - High	2 - Medium	2 - Medium	2 - Medium	1 - Low	1 - Low	2 - Medium	1 - Low	0 - None
	Middleware / Database	1 - Low	1 - Low	2 - Medium	1 - Low	1 - Low	2 - Medium	1 - Low	1 - Low	2 - Medium	1 - Low	0 - None
	Application Software											
	Mobile & Web Applications	1 - Low	1 - Low	1 - Low	2 - Medium	2 - Medium	2 - Medium	2 - Medium	1 - Low	1 - Low	1 - Low	0 - None
	Softw. oriented Services	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete
Value Chain Coverage		**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**	**4 - Complete**
	Make											
	Ally	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High	3 - High
	Buy	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete	4 - Complete
License Model		**3 - High**	**3 - High**	**3 - High**	**1 - Low**	**2 - Medium**	**2 - Medium**	**0 - None**	**0 - None**	**3 - High**	**3 - High**	**2 - Medium**
	Sell Rights	2 - Medium	3 - High	3 - High	1 - Low	2 - Medium	1 - Low	0 - None	0 - None	3 - High	3 - High	2 - Medium
	Sell Usage Rights											
	Freeware	0 - None	1 - Low	1 - Low	1 - Low	2 - Medium	0 - None	0 - None	0 - None	1 - Low	3 - High	2 - Medium
	Open Source (w/o inheritance)	2 - Medium	2 - Medium	3 - High	0 - None	2 - Medium	1 - Low	0 - None	0 - None	3 - High	3 - High	0 - None
	Viral Open Source	3 - High	3 - High	3 - High	0 - None	2 - Medium	2 - Medium	0 - None	0 - None	3 - High	3 - High	0 - None
Pricing Model		**0 - None**	**0 - None**	**2 - Medium**	**0 - None**	**3 - High**	**0 - None**	**0 - None**	**2 - Medium**	**0 - None**	**0 - None**	**0 - None**
	Usage Based	0 - None	0 - None	2 - Medium	0 - None	3 - High	0 - None	0 - None	2 - Medium	0 - None	0 - None	0 - None
	Usage Independent											
Market Penetration		**0 - None**	**2 - Medium**	**0 - None**	**3 - High**	**3 - High**	**3 - High**	**1 - Low**	**3 - High**	**1 - Low**	**3 - High**	**2 - Medium**
	Low	0 - None	2 - Medium	0 - None	3 - High	3 - High	3 - High	1 - Low	3 - High	1 - Low	3 - High	0 - None
	Medium											
	High	0 - None	2 - Medium	0 - None	3 - High	3 - High	3 - High	1 - Low	3 - High	1 - Low	3 - High	2 - Medium
Operating Margins		**3 - High**	**2 - Medium**	**3 - High**	**1 - Low**	**2 - Medium**	**3 - High**	**1 - Low**	**3 - High**	**2 - Medium**	**2 - Medium**	**0 - None**
	Low	2 - Medium	1 - Low	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	2 - Medium	2 - Medium	2 - Medium	0 - None
	Medium											
	High	3 - High	2 - Medium	3 - High	1 - Low	2 - Medium	3 - High	1 - Low	3 - High	2 - Medium	2 - Medium	0 - None
Technical Platform		**1 - Low**	**1 - Low**	**3 - High**	**1 - Low**	**0 - None**	**2 - Medium**	**1 - Low**	**2 - Medium**	**2 - Medium**	**1 - Low**	**0 - None**
	Java	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	C	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	C++											
	C#	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	PhP	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	Python	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	(Visual) Basic	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	Objective-C	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	Perl	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	JavaScript	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
	Others	1 - Low	1 - Low	3 - High	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	2 - Medium	1 - Low	0 - None
Paradigms		**2 - Medium**	**1 - Low**	**3 - High**	**3 - High**	**2 - Medium**	**2 - Medium**	**2 - Medium**	**3 - High**	**3 - High**	**3 - High**	**1 - Low**
	SOA											
	Cloud Computing	2 - Medium	0 - None	2 - Medium	3 - High	2 - Medium	2 - Medium	1 - Low	3 - High	2 - Medium	1 - Low	0 - None
	Lean	2 - Medium	0 - None	3 - High	0 - None	0 - None	0 - None	1 - Low	0 - None	3 - High	3 - High	1 - Low
	Multi-Tenancy	2 - Medium	0 - None	3 - High	0 - None	0 - None	1 - Low	1 - Low	3 - High	0 - None	2 - Medium	0 - None
	Mobile	2 - Medium	0 - None	2 - Medium	0 - None	2 - Medium	2 - Medium	2 - Medium	1 - Low	1 - Low	1 - Low	0 - None
	Security	2 - Medium	1 - Low	3 - High	1 - Low	0 - None	0 - None	2 - Medium	3 - High	2 - Medium	2 - Medium	0 - None
	Web Services	2 - Medium	0 - None	3 - High	0 - None	0 - None	0 - None	1 - Low	0 - None	1 - Low	1 - Low	0 - None
	Web 2.0	2 - Medium	0 - None	2 - Medium	0 - None	2 - Medium	0 - None	2 - Medium	0 - None	0 - None	1 - Low	0 - None
	Real-time	2 - Medium	0 - None	2 - Medium	0 - None	0 - None	1 - Low	1 - Low	2 - Medium	0 - None	1 - Low	0 - None
Localization		**0 - None**	**1 - Low**	**3 - High**	**0 - None**	**3 - High**	**1 - Low**	**1 - Low**	**1 - Low**	**0 - None**	**2 - Medium**	**0 - None**
	Local	0 - None	1 - Low	1 - Low	0 - None	3 - High	1 - Low	1 - Low	1 - Low	0 - None	2 - Medium	0 - None
	AMERICAS	0 - None	1 - Low	3 - High	0 - None	3 - High	1 - Low	1 - Low	1 - Low	0 - None	2 - Medium	0 - None
	EMEA											
	APJ	0 - None	1 - Low	3 - High	0 - None	3 - High	1 - Low	1 - Low	1 - Low	0 - None	2 - Medium	0 - None
Degree of Standardization		**1 - Low**	**3 - High**	**3 - High**	**3 - High**	**1 - Low**	**3 - High**	**3 - High**	**0 - None**	**3 - High**	**2 - Medium**	**1 - Low**
	Individual Production	1 - Low	3 - High	3 - High	3 - High	1 - Low	3 - High	3 - High	0 - None	3 - High	2 - Medium	1 - Low
	Batch Production	1 - Low	3 - High	2 - Medium	3 - High	1 - Low	2 - Medium	2 - Medium	0 - None	2 - Medium	1 - Low	0 - None
	Bulk Production											
Channel		**1 - Low**	**1 - Low**	**1 - Low**	**3 - High**	**3 - High**	**3 - High**	**0 - None**	**0 - None**	**0 - None**	**0 - None**	**1 - Low**
	Sales Agents											
	Retail	1 - Low	1 - Low	1 - Low	3 - High	3 - High	3 - High	0 - None	0 - None	0 - None	0 - None	1 - Low
	Online	1 - Low	1 - Low	1 - Low	3 - High	3 - High	0 - None	0 - None	0 - None	0 - None	0 - None	0 - None
	Telesales	1 - Low	1 - Low	1 - Low	1 - Low	3 - High	0 - None	0 - None	0 - None	0 - None	0 - None	0 - None
	Events	1 - Low	1 - Low	1 - Low	1 - Low	3 - High	0 - None	0 - None	0 - None	0 - None	0 - None	0 - None
Target Industries		**2 - Medium**	**0 - None**	**2 - Medium**	**0 - None**	**3 - High**	**3 - High**	**2 - Medium**	**2 - Medium**	**0 - None**	**1 - Low**	**0 - None**
	Agri., Forestry, And Fishing	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Mining	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Construction	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Manufacturing											
	Trans/Comm/Elect/Gas/Sanitary	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Trade	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Finance/Insurance/Real Estate	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Services	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
	Public Administration	2 - Medium	0 - None	2 - Medium	0 - None	3 - High	3 - High	2 - Medium	2 - Medium	0 - None	1 - Low	0 - None
Target Customer Size		**2 - Medium**	**0 - None**	**3 - High**	**1 - Low**	**3 - High**	**3 - High**	**2 - Medium**	**2 - Medium**	**1 - Low**	**2 - Medium**	**1 - Low**
	Private Individuals	2 - Medium	0 - None	3 - High	1 - Low	3 - High	3 - High	2 - Medium	2 - Medium	1 - Low	2 - Medium	1 - Low
	Small Organizations	2 - Medium	0 - None	3 - High	0 - None	2 - Medium	3 - High	1 - Low	2 - Medium	0 - None	2 - Medium	1 - Low
	Medium Organizations	1 - Low	0 - None	2 - Medium	0 - None	2 - Medium	1 - Low	1 - Low	1 - Low	0 - None	1 - Low	1 - Low
	Large Organizations											
Target Customer Type		**1 - Low**	**0 - None**	**2 - Medium**	**1 - Low**	**2 - Medium**	**1 - Low**	**3 - High**	**2 - Medium**	**2 - Medium**	**2 - Medium**	**0 - None**
	User											
	Developer	1 - Low	0 - None	2 - Medium	1 - Low	2 - Medium	1 - Low	3 - High	2 - Medium	2 - Medium	2 - Medium	0 - None
Operating Model		**2 - Medium**	**0 - None**	**3 - High**	**3 - High**	**3 - High**	**3 - High**	**2 - Medium**	**3 - High**	**3 - High**	**3 - High**	**2 - Medium**
	On Premise											
	On Demand	2 - Medium	0 - None	3 - High	3 - High	3 - High	3 - High	2 - Medium	3 - High	3 - High	3 - High	2 - Medium
Support Model		**0 - None**	**0 - None**	**0 - None**	**0 - None**	**2 - Medium**	**0 - None**	**0 - None**	**2 - Medium**	**2 - Medium**	**4 - Complete**	**0 - None**
	Standard Support	0 - None	0 - None	0 - None	0 - None	2 - Medium	0 - None	0 - None	2 - Medium	2 - Medium	4 - Complete	0 - None
	Few Support Offerings											
	Customer Specific Support	0 - None	0 - None	0 - None	0 - None	2 - Medium	0 - None	0 - None	2 - Medium	2 - Medium	4 - Complete	0 - None
Maintenance Model		**0 - None**	**0 - None**	**2 - Medium**	**2 - Medium**	**1 - Low**	**0 - None**	**0 - None**	**3 - High**	**3 - High**	**2 - Medium**	**2 - Medium**
	Weekly	0 - None	0 - None	2 - Medium	2 - Medium	1 - Low	0 - None	0 - None	3 - High	3 - High	2 - Medium	2 - Medium
	Monthly	0 - None	0 - None	2 - Medium	2 - Medium	1 - Low	0 - None	0 - None	3 - High	3 - High	2 - Medium	2 - Medium
	Quarterly	0 - None	0 - None	2 - Medium	1 - Low	1 - Low	0 - None	0 - None	3 - High	3 - High	2 - Medium	2 - Medium
	Biyearly											
	Yearly	0 - None	0 - None	1 - Low	1 - Low	1 - Low	0 - None	0 - None	3 - High	3 - High	2 - Medium	2 - Medium
Replacement Strategy		**0 - None**	**0 - None**	**3 - High**	**0 - None**	**1 - Low**	**2 - Medium**	**1 - Low**	**3 - High**	**3 - High**	**2 - Medium**	**3 - High**
	One Release	0 - None	0 - None	3 - High	0 - None	1 - Low	1 - Low	1 - Low	2 - Medium	3 - High	2 - Medium	3 - High
	Few Releases											
	Many Releases	0 - None	0 - None	2 - Medium	0 - None	1 - Low	2 - Medium	1 - Low	3 - High	3 - High	2 - Medium	3 - High