



Lisbon School
of Economics
& Management
Universidade de Lisboa

MASTERS IN MANAGEMENT (MIM)

MASTERS FINAL WORK

PROJECT REPORT

SOFTWARE PARTNER ECOSYSTEMS: THE CASE OF SAP

DAVID LEONHARD ZIMANOWSKI

JULY - 2022



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ABSTRACT

Today's business world is moving more and more in the direction of multi-partnering and delivering products and services in cooperation with different partners. This can be observed in multiple industries but is especially prevalent in today's technology sector. The World Economic Forum brought up that the most valuable companies by market capitalization are nowadays dominated by the business model of ecosystems and digital platforms (Jacobides, Sundararajan, & Van Alstyne, 2019). This is a valid reason to dive deeper into this topic to find out how these ecosystems operate in practice and what limitations and challenges they might be facing.

This project report will present a structured literature research covering the topic of ecosystems in general, software ecosystems, and certain aspects about ecosystems, like setting them up and risks associated. It will then proceed to go into the analysis of the software ecosystem in practical application at the enterprise software corporation SAP which deploys a large ecosystem that fulfills multiple tasks. The information and data for this part of the report was gained during an internship position within SAP's Partner Ecosystem Success organization in combination with three semi-structured interviews with colleagues from within SAP. Within the conclusion, the information from the literature review is juxtaposed with the information gained from the practical example at SAP to get an idea of how the theoretical knowledge aligns with the practical application. The conclusion will discuss findings from within SAP and the literature within three main subtopics: Goals & Significance of the Ecosystem, Running an Ecosystem and Risks & Challenges. It will become apparent that a large part of what the literature says is reflected within SAP. However, there are certain topics where SAP has not yet fully perfected its processes and structures. On the other hand, SAP also has certain special aspects to its ecosystem that are not found in the literature.

To conclude the report, limitations to the research will be mentioned and suggestions for further research will be given.

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1 INTRODUCTION

In this project report I will analyze the topic of Partner Ecosystems in the Software industry. The concept of ecosystems has had a growing influence across many industries, especially in the world of technology. There are many examples of how companies, start-ups and established corporations have harnessed the power of this concept to achieve business-related goals and scale upwards. One example is Apple's App Store. Many developers, companies or individuals build apps on top of Apple's technological foundation and contribute these apps to the App Store. Both the developers and Apple benefit from this concept.

Since the concept of partner ecosystems has been such a strong driver for success stories for many companies like Apple, Uber and Amazon, I decided to deep-dive into this topic to research advantages, risks and practical aspects.

This project report has been written in cooperation with the enterprise software vendor SAP. The foundation for the practical data used in this report stems from my internship at SAP's Partner Ecosystem organization, along with interviews conducted within the organization.

1.1 Justification

The software industry has grown significantly over the past decades since it emerged in the second half of the 20th century. Just from 2009 to 2022, the spending on enterprise software worldwide has nearly tripled from 225 billion USD to 670 billion USD according to Statista (2022). This is also due to the rapid growth of the amounts of data generated and managed in modern companies and the pressure to become increasingly operationally efficient to keep up with the competition. This poses the question how providers of this enterprise software try to gain competitive advantage over their peers.

According to Williamson and Meyer (2012), the modern customer of enterprise software demands more complex and integrated solutions compared to standardized, homogenous solutions. How can software providers achieve this?

Research on software ecosystems is highly active in current times. This proves the high relevance in today's economy. Popp et. Al. (2019) mention that an area that requires further research is ways and recipes to attract new partners and grow ecosystems, as well as how these recipes affect long-term ecosystem health. Another aspect that requires further research is the concept of metrics for measuring health and success of ecosystems and how to influence these metrics.

1.2 Goals of the Report

The goal of this report is to explore the question: “How does the literature on software ecosystems align with the practical execution at SAP?”. This will be done using the practical case of SAP’s Partner Ecosystem. Apart from the literature, I would like to understand the processes and tools that are set up in today’s software industry to reap the benefits of deploying an ecosystem, including limitations and challenges that companies might face.

Looking at practical cases of software ecosystems in this level of detail as done in this project report is not popularly addressed. Adding this layer and perspective to the report and having it side-by-side with the literature already available on this topic will give a valuable insight into today’s software industry and its ecosystems.

1.3 Structure of the Report

Following the introduction, I will explore existing research literature papers and internet documents on partner ecosystems. This will be structured into a subchapter on partner ecosystems in general and a subchapter where I specifically shed light on software partner ecosystems. After a more general explanation, I will go into the topics of Software Ecosystem goals, setting up & running a Software Partner Ecosystem and risks of doing so. Each of these topics will be highlighted in dedicated sub-chapters.

The next chapter presents the methodology. It will introduce the company in focus, SAP. Afterwards, the internship position within this organization will be explained since it will serve as one of the main data and information sources for the analysis. The last part of the methodology chapter will be an outline of the data collection methods. In the analysis chapter, the findings and insights gained during the internship, along with the interviews, will be presented in a structured fashion. It will contain subchapters that cover important aspects to SAP’s ecosystem. In the conclusion, these findings will be juxtaposed with the theoretical knowledge gained from the literature to come to a conclusion on how SAP’s ecosystem aligns with the academic research on this topic. In this chapter, a critical stance will be taken to evaluate certain practices that SAP pursues and how they organize and run their ecosystem.

2 LITERATURE REVIEW

2.1 Partner Ecosystems

An ecosystem is a set of companies that works towards a common goal by leveraging an exchange of products and/or services. These companies usually form a value chain to serve the same customer group (Popp, 2010). They do not work as a rigid conglomerate but rather as a loosely coupled network that is different to traditional bilateral partnerships in the sense that they are larger, more diverse and more interconnected (Williamson & De Meyer, 2012). Companies can leverage ecosystems to increase revenue through new market opportunities by co-marketing, co-selling and co-development (Abrams, 2021). The increase in revenue can be achieved by offering additional product value to the customer (Jacobides, Sundararajan, & Van Alstyne, 2019).

The company that deploys and orchestrates such an ecosystem at the core is the ecosystem orchestrator (Jacobides, Sundararajan, & Van Alstyne, 2019). I will further on also refer to it as the “core company”.

“In a few short years, the ranking of most valuable companies by market capitalization has totally shifted to being dominated by one business model – digital platforms and ecosystems.” (Jacobides, Sundararajan, & Van Alstyne, 2019, p. 5)

This quote taken from the World Economic Forum clarifies the growing importance of ecosystems in the world of business. One large reason for the advance of ecosystems is that digitization has enabled linking up with multiple partnering companies to deliver one client solution whereas before, communication and asset exchange across distance and company borders was much more difficult and costly.

2.2 Software Ecosystem

As a specific form of an ecosystem a software ecosystem is one that forms around a software selling company (Popp, 2010).

“A software ecosystem is a set of actors functioning as a unit and interacting with a shared market for software and services, together with the relationships among them.”

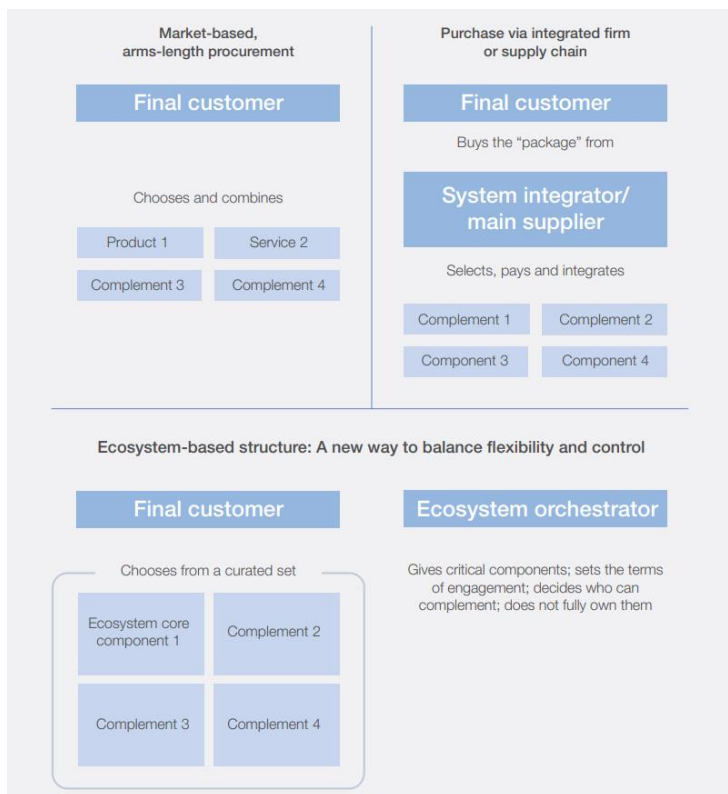
(Popp, Cusumano, & Jansen, 2019, p. 18)

They significantly contribute to the value creation of many enterprises software companies. Thus, to gain a competitive advantage, the focus for software companies has shifted away from leveraging internal resources to using external resources that form the

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ecosystem. Earlier, enterprise software was developed by “siloe” independent companies for the customer. The focus was put on developing internal resources and capabilities. Nowadays, the market is more fragmented with many companies offering highly specialized software that serves a highly specific purpose. Customers nowadays demand more complete solutions and consequently, companies want to offer solutions to broader spectrums of needs (Jacobides, Sundararajan, & Van Alstyne, 2019). This is where ecosystem management comes into play (Williamson & De Meyer, 2012). It is highly beneficial to leverage the power of multiple contributing partners to offer a more complete product. This lays the foundation for achieving a competitive advantage.

Figure 1: Ecosystem Product Bundling



Source: Jacobides, Sundararajan, & Van Alstyne, 2019, p. 15.

It also enables the company running the ecosystem to scale the business without growing internal resources. Furthermore, ecosystems can lower the financial risk of the core company since there is less investment involved and ecosystems can quickly be adjusted with flexibility (Williamson & De Meyer, 2012). The partner companies, on the other hand, benefit from the core company’s large customer base and the reputation they have in the market. Apart from offering complementary software, partners can also

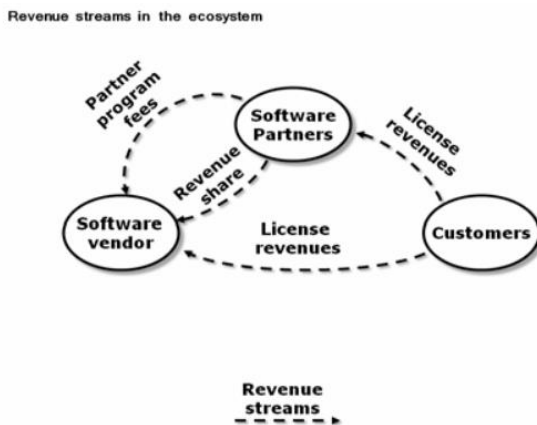
contribute to the ecosystem in other ways. They can resell the software (VAR: Value Added Reseller) or offer services to the end-customer, such as implementation, or support services, such as customization (Popp, 2010). The company has to take some business decisions when it comes to managing their ecosystem. Specifically, it is important to decide on a channel strategy and a product strategy. The channel strategy dictates which parts of the business value chain can be handed over to partners and which should be kept in-house. This includes for example customer contact, marketing activities and complementary services, like software implementation. This will have consequences on the scalability, profitability and controllability of these activities. The product strategy covers which parts of the main software (applications) are to be developed by partners and which are to be kept as in-house developments. Usually, companies keep the core software and the software platform in-house to have control over it and ensure quality. Partners can then contribute to this core product and enrich it based on the technological foundation that the core product offers (Avila & Terzidis, 2016) (Williamson & De Meyer, 2012). The technological foundation of the core product can be described as follows:

“[...] the extensible codebase of a software-based system that provides core functionality shared by the applications that interoperate with it and the interfaces through which they interoperate” (Schrieck et. Al., 2019, p. 2)

2.1.1 Software Ecosystem Goals

Software ecosystems can serve different goals. On a financial level, they can increase revenue streams by giving scalability and collecting fees from partners. In return, the partners have access to the broad customer base and the technological foundation of the company that is deploying the ecosystem.

Figure 2: Revenue Streams in Ecosystems



Source: Popp, 2010, p. 183.

Financial benefits are also realized by saving costs for outsourcing knowledge and activities like presales, sales and post-sales services (Popp, 2010). This lowers financial risk and allows more scaling of the business (Williamson & De Meyer, 2012). Antero and Andersen (2000) concluded that by achieving these economies of scale from the ecosystem, companies are able to provide greater customer value. The authors were able to conclude this by comparing two Danish software vendors, Navision and Maconomy. Navision deployed an ecosystem as part of their business model while Maconomy did not.

Software ecosystems also serve product related goals. The partners help strengthen the offering of the software vendor by filling “white spaces” which are functionalities not covered by the main software product. They do this by contributing their specialized expertise to develop add-ons to the core product (Schrieck et. Al., 2019). This results in a more complete software offering which is appealing to customers because they can cover a broad spectrum of their required software needs without purchasing multiple pieces of independent software. Another part of these product related goals is combining the innovation powers of the software vendor itself with those of the partners to develop more sophisticated solutions without having to contribute all the innovation power themselves (Popp, 2010).

Another goal of software ecosystems is network related. The value of a software solution increases with the number of customers and users of said software. This is mainly caused by the compatibility and ease of integration of systems. Therefore, enterprise software solutions usually polarize based on which company controls the market.

Customers are more likely to choose software which makes it easier for them to integrate with customer or supplier systems. Software specialists and consultants are usually also more readily available for the dominating enterprise software systems. This results in standardized markets. In the realm of Enterprise Resource Planning systems, SAP and Oracle have secured market leader positions which resulted in these network effects (Popp, 2010). This concept also applies to other areas, like search engines. Google was able to secure the leading market position and practically eliminated other search engines. In this case, the users of Google have enabled the company to enhance their searching algorithm which then attracted more users and so on (Jacobides, Sundararajan, & Van Alstyne, 2019).

The last goal of software ecosystems that Popp (2010) mentions is market related. This refers to the additional market access that partners offer. Especially among customer groups or regional markets where the ecosystem orchestrator is not strongly established, partners can contribute a customer base. This then ties back into the network effects mentioned before.

2.1.2 Setting up & Running a Software Ecosystem

Setting up and running a software ecosystem is a complex task. The scale and dynamics present within the ecosystem require a well-designed system and close management. Ecosystems need to constantly be cultivated and closely guided to ensure they function as designed (Williamson & De Meyer, 2012). As a starting point, the question should be “What does the customer want to do?”. This can serve as a good indication on how to design an ecosystem, and which partners and technologies to integrate (Jacobides, Sundararajan, & Van Alstyne, 2019).

To ensure smooth operations, a solid system of contractual agreements, legal agreements, and processes needs to be put into place (Higgins, 2020). From a technological angle, it is highly beneficial to provide technological platforms that partners can easily build upon, like App Store architectures and API's (Application Programming Interface).

Within software partner ecosystems, implementing partner programs can help scale and streamline partner activities. It can also ensure a consistent level of quality across the partners (Avila & Terzidis, 2016). Partner programs also incentivize partners to perform, as they can be promoted to another level of the program based on performance.

Furthermore, it helps build and maintain a close relationship among key partners (Jacobides, Sundararajan, & Van Alstyne, 2019). Partner programs also give the ecosystem agility since the core company can rotate partners up, down, in and out of the program levels depending on what the market demands (WorkSpan, 2020).

An important aspect to software ecosystems is managing sales and marketing activities within the system. There are ecosystems that still use Excel sheets or emails to store their data on potential customers, marketing activities and other aspects of the sales and marketing side. For a software vendor that runs an ecosystem, collaboration on marketing and sales activities can be a key part of the strategy that helps create additional revenue and enlarge the customer base. To enable seamless and efficient collaboration on these activities, it is useful to deploy a collaboration tool that is accessible by all partners and the core company. WorkSpan (2020) mentions three foundational components to an ecosystem. The first component is digitalizing the ecosystem. A collaboration tool could serve as one piece of this digitalization. It enables more efficient exchange of information and helps make reporting more reliable. The collaboration tool also serves the second component mentioned before: Connecting people, processes and data cross company allows the ecosystem to make strategic and operational decisions more effectively. It also builds trust between the partners and minimizes the chances of failed relationships between partners. A collaboration tool makes sales data, like potential deals, visible to the relevant partner in real-time. Usually, this data can only be found in the company's CRM (Customer Relationship Management) system which is usually not connected to the partner's system. This real-time data supply builds trust and helps the companies work on these deals more collaboratively (WorkSpan, 2020). CRM systems are the main enterprise software tool used for organizing and executing sales and marketing activities in large companies.

2.1.3 Risks of Running an Ecosystem

The main risk factor of running an ecosystem is losing a degree of control over the processes that are now not fully happening within the company but stretch across company borders. The core company needs to maximize the value gained from an ecosystem while trying to minimize this risk and its potential to interfere with processes. An example of when this can become a problem is when the partner fails to deliver its value to the customer or when the quality is below the standard – as a result the ecosystem

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orchestrator suffers in reputation and might be faced with costs. Another scenario would be that the partner does not appropriately manage confidential or sensitive data of the core company, that he has access to (Hennessy, n.d.).

Another risk factor is not being able to capture the share of the value created by partners, for example when partners do direct sales to customers (Williamson & De Meyer, 2012).

3 METHODOLOGY

To explore the question at hand (“How does the literature on software ecosystems align with the practical execution at SAP?”), this report will look at a practical example of a company that is deploying an ecosystem. The practical data and information of this report has been collected within an internship at the software corporation SAP. To better understand the context of where the data has been collected, an introduction of the company and the internship will be given.

3.1 *The company: SAP*

SAP SE (“Systems, Applications and Products in data processing”) is a multinational software company with roots and headquarters in Walldorf, Germany. The company employs 102.400 people worldwide from over 140 countries. It was founded in 1972 by five IBM Artificial Intelligence engineers that were working on an enterprise-wide computer system (Wikipedia, n.d.).

SAP’s vision statement is the following: *“Our vision is to help the world run better and improve people’s lives. Our solutions help people, businesses, and institutions achieve economic development, social progress, and environmental impact.”* Their products are made to make companies run more efficiently, use business insight more effectively and thus be more profitable and stay ahead on competitors (Comparably, n.d.).

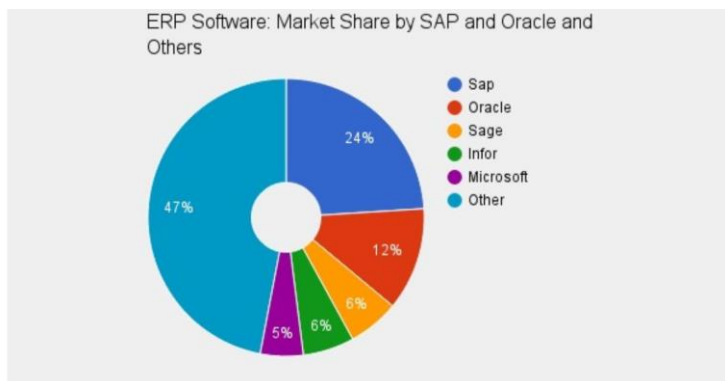
SAP released its first product RF in 1973. RF was a financial accounting system which was later an important component of SAP’s first ERP (Enterprise Resource Planning) system called SAP R/1. This was followed by SAP R/2 in 1979 and SAP R/3 in 1992. In 2015, SAP launched S/4 HANA. This is the most recent package of solutions, including ERP (Wikipedia, n.d.).

ERP systems are used by businesses to plan and manage their daily activities and integrate their business processes. This includes various areas of the business including Financial Accounting (SAP module FICO), Human Resources (SAP module HRM) and Production Planning (SAP module PP) (Anderson, 2021).

Nowadays, SAP has evolved into the largest non-American software company by revenue and the largest German Company by market capitalization. It owns offices in 180 countries and a revenue of around 27 billion Euros in 2020 (Wikipedia, n.d.).

SAP’s main competitor for ERP and database management is Oracle (Paperfree, 2020).

Figure 3: ERP Competitors



Source: Paperfree, 2020.

Other competing solutions include Microsoft Dynamics 365 for ERP and Customer Relationship Management (CRM), and Power Query and Power BI for Business Intelligence, Analysis and Visualizations.

3.2 Data Collection

The data for the analysis will be coming from two sources. Firstly, insights and experiences gained during the internship will be leveraged. Secondly, this information will be enhanced with interviews that were conducted within the Partner Software Solutions business unit. The interviews were conducted and recorded via teams. They had a scheduled duration of 45 minutes. This should give a deep understanding of the way this part of SAP's ecosystem is run, what potential risks and issues there could be and how SAP mitigates these.

I chose two colleagues within the Software Partner Solutions organization, each with a distinct role. To get another perspective, I additionally chose one colleague from the corporate development team who works in the area of Mergers and Acquisitions at SAP.

The interviews will be semi-structured as this style of interviewing will allow to explore the main questions asked, as well as dig into certain relevant topics deeper when they come up. The structure for the interview will include the following questions:

1. Please describe your role in the organization. (Tasks and responsibilities, whom do you mostly work with?)
2. In what way do you see your work impacting SAP's ecosystem?

3. Do you see any special aspects to SAP's ecosystem in comparison to other ecosystems?
4. What is SAP's approach in dealing with partners? (Communication with the partner, proximity with partners, joint processes)
5. Which main challenges and risks does SAP's ecosystem face in your opinion?
6. How does the team cope with these challenges and risks?

Since the colleague from the M&A side of the company has a different perspective of the partner business, I will omit questions 2 and 4 and dive deeper into the remaining interview questions.

The interviewees and their roles are summarized in the following table.

Table 1: Interviewees

Interviewee	Role	Date
Natalie Kern	VP Software Partner Cloud Success (Adoption and Consumption Team, Global)	15.02.2022
Karl-Michael Popp	Senior director of Mergers and Acquisitions	24.02.2022
Gerard McCann	Go-to-Market team North America	15.02.2022

Source: The author

4 ANALYSIS

4.1 Significance of the ecosystem for SAP

“There is no way that we can support the transformation of our customers only with SAP-developed solutions” (Klein, 29.09.2020)

This quote by the CEO shows the importance of SAP’s ecosystem to the company. This importance has been recognized at the top level (board and CEO) and mentioned on multiple occasions. It also led to the introduction of the Partner Ecosystem Success organization to facilitate the efforts of enhancing the ecosystem. Partner Ecosystem Success does the “handholding” for the partners at SAP. It connects the partners to right places in the company and opens the doors to the SAP sales field.

In 2019, it was estimated the ecosystem would double its revenue in the subsequent 5 years. Thus, the ecosystem is considered an accelerator for success and growth for the overall company (Hinchcliffe, 2019). SAP believes that further integration of the ecosystem and SAP over the next couple of years will be critical for success. Especially when considering the push to offering cloud solutions instead of on-premises, the ecosystem will play a crucial role as mentioned by an Interviewee during the interview.

“Christian Klein clearly called out that we want to become a cloud company. (...) you can only become a cloud company if you work in lockstep with the ecosystem because the ecosystem can scale.”

This is due to the scalability that integration partners and software partners provide to the company. As mentioned by an interviewee, SAP has been in a solid position to switch to the cloud as the on-remise business represented a large cash cow that still grows moderately while, with investments taken from this business, the cloud business was able to grow and scale at a rapid rate.

“(...) we were in the lucky situation that we had a solid base of on-premises revenue and we were able to (...) grow and manage a growing share of cloud services revenue (...) and we were surprised in the past that both businesses grew.”

The switch to the cloud provides more flexibility for the customer, as well as a steadier stream of revenue for SAP and its partners.

The company has over 22.000 partner companies worldwide. These partnerships are classified into 4 areas. The first one is “Solution Sales” which is done by reselling partners

that advise customers on the solutions and sell them. The next area is “Consulting Services” within which consulting firms help customers with the implementation, customization, and extension of SAP solutions. The third area is “Solution Hosting” which is about providing infrastructure to maintain and run SAP solutions on instead of the customer installing the systems onto on-premises data bases. This infrastructure usually consists of cloud-based data bases and computing resources. The fourth area is “Solution Building”. These partners build solutions that extend and complement the functionality of SAP-native solutions as add-ons. This greatly increases SAP’s scale and the functionality of the solutions which in turn improves SAP’s competitive edge. This part of Partner Ecosystem Success is managed by the team of “Software Partner Solutions”.

As an interviewee brought up in the interview, the ecosystem also serves another purpose. It can be considered a “greenhouse” for companies that are potential candidates for an acquisition. SAP can get acquainted with the partner and evaluate the performance of their solution.

“Envision our ecosystem (...) as a greenhouse not just for creating revenue for SAP but to monitor and select companies for acquisition by SAP.”

This eliminates the “acquaintance phase” of the post-merge integration.

4.2 Software Partners & Communication

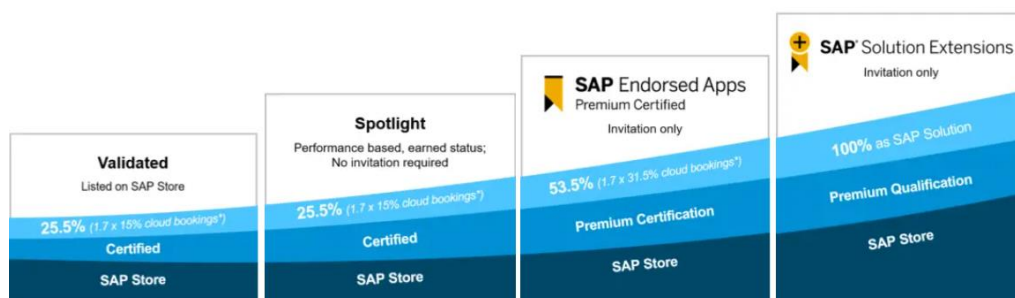
As mentioned before, SAP didn’t have a dedicated ecosystem organization before the introduction of “Partner Ecosystem Success”. The department of Partner Ecosystem Success (formerly “Global Partner Organization”) of SAP focuses on collaborating with partner companies to add business value to customers and scale SAP’s business.

Within the software partner ecosystem, SAP has a progression ladder for partners which groups software partners in one of four tiers. The higher the partners get in this progression, the closer the cooperation becomes, and the more support and perks are offered for the partners. Thus, partners are incentivized to pursue higher levels in the progression. This is based on goals and benchmarks that are measured for the partners. Not many partners reach the higher progression levels since the communication and cooperation with the core company SAP is very intense which requires a lot of resources from SAP. The lowest level is “validated” partners. From this level, partners can move up to “Spotlight”. Only the top two levels of the progression were in scope of the internship. Both these levels of the partner progression are only accessible for partners

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via direct invitation. The lower level of this is “Endorsed Apps”. The partner receive support in the marketing and the selling of the solutions. The sales of the solutions itself are still on the partner’s paper meaning they process the revenue and direct a cut of this revenue to SAP. “Solution Extensions” (SolEx) is the highest level of this software partner progression. The solutions within this program are marketed as being SAP-owned. Even though it is still a collaboration on sales and marketing, SAP drives a lot of these efforts itself. Since SAP is driving a lot of the sales efforts themselves, and supporting the partners very closely, it has full, and direct visibility over the pipeline. The pipeline refers to the “queue” of leads/opportunities (potential customers) that SAP and its partners are pursuing. SolEx deals are signed on SAP paper, meaning the revenue flows directly to SAP and partners are reimbursed according to the cut they receive on closed deals. The revenue cut for SAP rises with each level of the partner progression. On the higher levels of the progression, Endorsed Apps and Solution Extensions, SAP offers the partner certain tools to succeed within the ecosystem. Specifically, partners receive a dedicated “Partner Success Manager” (PSM) that is defined as the “CEO of the partnership”. This means, they cover all sales related topics of the partnership and support with certain issues. Partners also receive a “Partner Marketing Manager” and regional Go-to-Market colleagues who manage Marketing related topics in respect to the partner. This includes helping partners go to market with SAP and coordinating marketing activities.

Figure 4: SAP Partner Progression



Source: SAP Jam, n.d.

There are certain joint processes in place between the partner and SAP to ensure a consistent data foundation for forecasts and pipeline information. In co-selling and co-marketing it is important to have efficient processes that connect people and data across

companies to be efficient in operating as a sales unit. As one tool for joint processes, SAP Partner Ecosystem Success decided to acquire the collaboration platform “WorkSpan”. This is a third-party SAAS (Software as a Service) that is licensed to SAP for a fee and that partners and SAP colleagues have access to. This was done as an effort to have a real-time tool accessible to partners and SAP on sales and marketing data, coming from CRM. Since partners and SAP have separate CRM systems that cannot be granted external access to, and Excel spreadsheet tracking is highly inefficient and leaves room for mistakes and outdated data, it is highly useful to have such a real-time tool. In an ideal case, WorkSpan contains all the leads and marketing activities driven collaboratively and is fed directly through an API from SAP CRM and potentially the partner’s CRM.

An important aspect to the ecosystem is reporting for partners and internal stakeholders. WorkSpan has a report infrastructure that allows the flexible creation of reports on sales opportunities or marketing activities. This is especially important for partners since they can use the portal as a self-service reporting tool and extract the reports they need at any time. This eliminates effort on both sides and makes the reporting process more efficient and accurate. The reports are close to real time and can be modified with filters. To the partners, they provide a nearly complete picture of the pipeline in SAP CRM since WorkSpan is directly fed by this system. However, WorkSpan is, like any other system, not completely running without issues. Data Quality issues and problems with the API can occur and the integration with partner CRM systems is not always running smoothly. Since the system is not managed by SAP’s IT department but rather by colleagues in the ecosystem organization themselves, the maintenance and implementation of new functionalities is restricted by resource scarcity. As an overall assessment, however, WorkSpan fulfils the function it has been implemented for and serves a versatile tool for data exchange between partners and SAP.

To grant partners a direct view on the pipeline within SAP CRM, partners are also supplied with partner reports once a month. These are extracted directly from the system and sent via e-mail to the partners. This gives the partners another ground for forecasting and business decisions. The organization is planning to automate this process since it currently takes up resources that could be used in other ways. This ties back into the point of inefficient excel spreadsheets and e-mail data exchange within the ecosystem. Another piece of reporting for the partners are the royalty reports that are supplied to the partners by SAP’s royalty team. These reports are the source for revenue cut payments to and from

SAP. Since the internship was not involved in this process, there will not be a deep dive into it at this point.

During the internship, there was also strong involvement with reporting needs for internal stakeholders. Firstly, there are steering calls at the managerial level of the organization that require data to make business-related decisions and forecast results. The data for these calls is taken from SAP CRM and WorkSpan and run through Excel queries to feed a PowerPoint slide deck that is used for the call. Apart from pipeline and revenue figures by partner, certain metrics are calculated. For financial forecasting on Endorsed Apps pipeline, reports get pulled from WorkSpan into an Excel query and sent to internal stakeholders like PSM's. This is important since Endorsed Apps pipeline is mostly captured in partner CRM systems. As discussed before, WorkSpan is leveraged in this context to have a view on the partner CRM's pipeline and supply it to colleagues that need visibility into it. Once again, this proves WorkSpan's relevance and unique ability to enable cross-partner reporting. The last example for internal reporting that will be covered is the Power BI dashboard that I managed during the internship built for internal stakeholders. It is based on WorkSpan data and provides many visuals and filter functions to report on pipeline and marketing activity data. It is mostly leveraged by management to get visibility into how the colleagues are executing on marketing activities and how much pipeline is created within certain periods, for example. This dashboard is due to be replaced by SAP's competitor product SAP Analytics Cloud to enable more real-time analysis as it will be fed through an API built by WorkSpan, whereas the Power BI is manually fed with reports from WorkSpan. It is another effort to make processes more effective and less costly in terms of resources.

4.3 Risks and Challenges at SAP ecosystem

One of the main risks in the sales side of SAP's ecosystem is the channel conflict. This can refer to multiple issues. Firstly, as one of the interviewees mentioned, the SAP sales representatives are not working specifically for the ecosystem, but they represent SAP as a whole. This means that they can at times be inclined to try to sell SAP-native solutions to customers instead of offering them a partner solution. There are different reasons for why they might decide to do that. Selling partner software can complicate the process for them since they have to include external colleagues into the sales process. This can also lead to a certain loss of control over the whole process.

“If a seller has to do forecasts on a regular basis and he pulls in a partner, he sometimes loses a little bit of control over the deal because there is a third party in there who might disturb things.”

If there is no adequate incentive to include partner solutions, the sales representatives will tend to stick with SAP-native solutions. This behaviour is clearly bad for the ecosystem organization as a whole but also for SAP since partner solutions will be a contributing factor to scaling and moving into the cloud as discussed before. It might also weaken the ecosystem when partners are dissatisfied with SAP’s sales behaviour. There are large competitor companies that try to attract ecosystem partners. To mitigate this risk, partner solutions are being put on top of the sales agenda on a high level at SAP to make sure sales representatives are aware of the need to include these solutions where they are appropriate. There is also an effort to simplify sales processes with partners, especially using systems like WorkSpan. Thirdly, SAP tries to financially incentivize sales representatives to include partner solutions.

Another channel conflict that an interviewee mentioned is partners going past SAP structures to sell directly to customers.

“You will occasionally have a partner that tries to sell their product directly instead of going through the SAP channels.”

This is especially likely to occur with partners that are not in the SolEx program since they manage the sales process themselves to an extent. This is problematic for SAP since they do not receive the agreed revenue cuts and they lose visibility over which customer purchased which solution which can lead to issues later on. The main solution to this is the clear guidelines and rules set in the contracts with the partners, according to the level of the progression that they are in. Selling software without the involvement of SAP is a clear violation of these agreements and can be punished by excluding partners from the ecosystem.

As another interviewee said, SAP’s ecosystem is also confronted with product conflicts at times. As mentioned before, software partners usually develop solutions to cover functionalities not yet covered by SAP-native solutions (“white spaces”). If, however, SAP development picks up development for a solution for one of these white spaces, it leads to competing products between SAP’s ecosystem and SAP itself.

“We have basically called out white spaces and encouraged partners to develop in those white spaces. (...) if SAP development understands that this is a cool white space

and the solution is super successful, why don't we develop our very own solution for it?"

This can occur due to development not being familiar with partner solutions or a clash of interests between the different departments at SAP. Apart from SAP basically competing with itself, partners are dissatisfied and might stop contributing to the ecosystem or be drawn to a competitor. The product conflict is a risk that is difficult to mitigate since different interests are involved. It will usually have to be dissolved at higher managerial levels.

A lower-level challenge that I was heavily involved in during the internship is related to the WorkSpan system. To fully leverage this system's power, internal and external stakeholders need to adopt this system as strongly as possible. This can be difficult since it requires additional onboarding and learning on the users' part who are already using a number of different systems and tools. The main effort to solve this is driving adoption by giving onboarding sessions and having the WorkSpan operations colleagues support users with every issue they have using the system. Furthermore, the constant development and enhancing of the system ("system modelling") with involvement of development at WorkSpan is an attempt to improve functionality and accuracy of the system. Partner Ecosystem Success management also pushed WorkSpan adoption by encouraging colleagues to leverage the system.

Another potential problem with WorkSpan is the data consistency and quality that was mentioned before. It is crucial that the system always has reliable and current data. This includes data privacy issues where partners might be able to see data that should not be visible to them, such as pipeline of other partners. To mitigate this, during the internship, I was heavily involved in doing data quality checks and identifying sources of incomplete or inaccurate data to initiate projects to fine tune the process.

4.4 Special aspects to SAP ecosystem

Many large software companies run ecosystems nowadays. Examples include Apple, Intel and Microsoft. It is to be expected that there are certain best-practices and foundations that all these companies follow. However, every company will also vary considerably in size of the ecosystem and in the way they design and run the ecosystems. The following aspects to SAP's ecosystem can be considered as more unique and special to SAP's case. This does not imply that no other software company follows some of these

approaches, but it simply suggests that these aspects have been designed specifically by SAP and they are not applicable across all ecosystem designs.

The first way SAP differentiates its ecosystem is the organizational structure within the company. Instead of running the ecosystem as an integrated part of the company's departments, like Marketing and Sales, they introduced an organizational unit that specializes on leading the partners to success within the realm of SAP. As mentioned before, this organization "Partner Ecosystem Success" dedicates itself to "handholding" the partners and representing their interests within SAP. This leads to an ecosystem that runs smoothly and with its success, adds value to both SAP and the partners. It also improves partners' satisfaction and sets SAP apart from competitors, thus attracting and maintaining partners. An important factor of satisfying partners is generating pipeline for software partner solutions which can be an issue for ecosystem companies that have native solutions that might be preferred by sales representatives. Since SAP recognizes the importance of the ecosystem for the future success of the company as a whole, they financially incentivize the SAP sales departments to include partner solutions, especially from Endorsed Apps and Solution Extensions, in potential deals to customers. One of the interviewees mentioned that this is one of the main reasons why partners try to pursue higher levels of the progression latter where they willingly give up a larger percentage of their sales revenue to SAP.

"We have partners joining the Endorsed Apps partner program by intentionally giving away parts of their revenue to get the visibility in the Endorsed business program with the AE's (Account Executives)."

One of the main specialities of SAP's ecosystem, specifically within the Software Partner business, is the categorization on the partner progression latter instead of simply building a set of bilateral partnerships that work together to deliver value to the customer. This serves a few purposes. Firstly, it helps distribute SAP's resources to optimally harness the power of the ecosystem. As discussed previously, the higher in the progression latter the partner sits, the more resources they receive from SAP to facilitate the success of the solution. Apart from this, the progression latter also incentivizes partners to perform to move up the progression latter by fulfilling certain Key Performance Indicators (KPI) to consequently be moved up to the next level where they receive additional resources from SAP and get more exposure to SAP's sales teams. Being part of a higher level of the progression also serves as a proof of quality to potential customers. As mentioned by an interviewee, another advantage to this concept is that it

acts as a “greenhouse” for the selection of acquisition partners. Candidates for acquisition will usually have progressed all the way to the Solution Extensions category and proven themselves as a candidate with high revenue potential.

The Solution Extensions concept as such can be considered a special aspect to SAP’s ecosystem. SAP essentially takes complete responsibility for the solutions in this program by selling them on their own paper and supporting them as if they were one of their own solutions with marketing budgets and close monitoring. This makes the collaboration between SolEx partners and SAP tighter than the regular ecosystem concept and it results in a few distinctive outcomes and implications. Sales and Marketing processes have to be adjusted to fit this business model since SAP sales departments are actively involved in selling these products. Reporting and transparency become major topics and SAP’s accounting processes must reflect the fact that the software is sold on own paper. This is the reason why the partner reporting piece mentioned earlier is so vital for the Solution Extensions business.

Another special aspect is the SAP store. This is a portal where potential customers can search for partner solutions that fit their specific need. This includes solutions from all levels of the partner progression and offers an additional level of exposure to customers for the software partners.

5 CONCLUSION

5.1 Introduction

As highlighted in the analysis, SAP has increasingly placed a larger emphasis on the ecosystem as a driver for future value creation and enablement of transforming the business to cloud. This aligns with the World Economic Forum's prediction that the ranking of the most valuable companies has shifted to being dominated by ecosystems and digital platforms. The following subchapters will juxtapose the information found in the literature review with the practical view of SAP gained in the analysis.

5.2 Discussion

5.2.1 Goals and Significance of an Ecosystem

One of the main motivations for creating ecosystems has been the urge to deliver more complete and sophisticated solutions for the customer. It eliminates the need to purchase many independent smaller solutions to execute the business process requirements (Jacobides, Sundararajan, & Van Alstyne, 2019). Partners contribute their expertise in the form of software solutions to a larger software vendor's core product to fill certain functionalities not covered by the main product. These are also referred to as white spaces (Schrieck et. Al., 2019). SAP is following this approach with all the software partners they have attracted so far and that they have classified into the partner progression categories based on certain metrics. The SAP store offers customers a portal where they can search partner solutions that fill certain white spaces that they have in their current software product. A more complete product will lead to a competitive advantage, in this case for SAP (Williamson & De Meyer, 2012). As SAP is already one of the market leaders for corporate software, the ecosystem should only manifest this position in the coming years.

An obvious motivation for deploying an ecosystem is the increased revenue achieved by selling partner software in addition to owned software. This increased revenue can stem from several advantages that the ecosystem brings. Two important advantages are the revenue cuts that the core company collects from partner software sales and the scalability of integrating partner software instead of having to use many internal resources to develop new solutions (Popp, 2010). SAP is monetizing on the concept of fee

collection, or revenue cuts, based on their partner progression model. The higher up a partner is, the more benefits they receive from SAP, such as marketing and sales resources and visibility for SAP sales departments. In return, partners give up a larger percentage of their revenue. SAP is also aware of the scalability that partners, such as software partners and integration partners like consulting firms, provide. As mentioned in the analysis, SAP is counting on the power of the ecosystem to successfully switch the main business model from on-premises to cloud software.

Another important advantage of ecosystems is the increased flexibility it grants the company. There is less financial risk because the financial investments are not as large as they would be if all the ecosystem's activities would be shifted to within the company. The company has flexibility in adjusting the ecosystem to their needs quickly and without large complications (Williamson & De Meyer, 2012). Specifically looking at software partners, SAP is highly flexible in adjusting their ecosystem by shifting partners up and down the partner progression, or switching partners in and out completely, based on their needs.

Specifically, within the realm of the software industry, network-related goals of ecosystems play a large role. Companies with the most customers and partners usually polarize and attract even more partners and customers because of the ease of integration with existing systems and data bases. Many people know how to use the software and consultants are readily available (Popp, 2010). This is apparent when looking at SAP. They are already the strongest player on the market of ERP (Enterprise Resource Planning) software and were thus able to attract many partners into their ecosystem. This in turn increases their customer base further since the end product is complete and more valuable. Due to a larger customer base, more partners try to join the ecosystem. This ends up forming a spiral of more customers and partners, and further solidifies SAP's market leader position.

One of the main goals for partners to join an ecosystem is the core company's large customer base and reputation in the market that they can capitalize on (Popp, 2010). Being a market leader in corporate software with a very large customer base and reputation, just having an SAP partnership badge on the partner's website already boosts their reputation and can increase sales. When the partner gets exposure to the SAP sales structures, they have a large potential for additional revenue with the extensive customer base that they are then presented to. This is one of the main factors that SAP can leverage to attract new partners.

5.2.2 *Running an Ecosystem*

A crucial factor for a smoothly running ecosystem are clearly defined processes and contractual agreements (Higgins, 2020). SAP has these detailed contracts with partners that clearly define responsibilities on both sides and joint processes. Looking at software partners, these include revenue cuts and other responsibilities that can change depending on the level of the partner progression. Joint processes are defined at SAP and they are crucial for the organization's success. However, at times these joint processes are not clear or not workable, for example due to technical limitations. An example is the WorkSpan platform that at the current stage lacks some functionalities for the smooth operation of, for example, joint Target Account Planning. In these cases, the users retreat to excel sheets and e-mail communication to fulfil these tasks. This way, they miss out on the efficiency and data quality that these systems are supposed to provide. The introduction of the Partner Ecosystem Success organization in 2020 is another way SAP tries to make joint processes clearer and more standardized. This improves partner satisfaction and should help grow the ecosystem for the future.

The concept of partner programs within ecosystems helps scale and streamline activities and ensures quality (Avila & Terzidis, 2016). It incentivizes the partners to perform and be promoted. It also helps foster close relationships with the most important partners (Jacobides, Sundararajan, & Van Alstyne, 2019). SAP has introduced such partner programs with their partner progression for their software partners. It serves the purposes just mentioned and acts as a “greenhouse” for potential acquisition candidates, as one of the interviewees mentioned in the interview. The Solution Extensions partner program should be specifically called out at this point. Within this program, there is a unique degree of closeness between SAP and the partner. SAP takes complete responsibility for the products in this program and largely drives sales and marketing activities for them themselves.

The product strategy plays an important role for core companies within software ecosystems to ensure quality and maximum value gain from the partners. It includes the decision of which parts of the software offering are to be developed internally and which are to be developed by the partner. Usually, the core product and the technological platform are kept in-house to ensure quality and to have close control over these crucial parts of the overall software offering. Partners are then invited to contribute onto this technological platform to extend the main product (Avila & Terzidis, 2016) (Williamson

& De Meyer, 2012). SAP follows this approach. The core system, for example ERP, is developed in-house with its core capabilities. A technological platform has also been developed and is available for partners to plug in their solutions. As an interviewee mentioned, SAP specifically calls out white spaces within the core product for partners to develop on these and complete the final offering for the customer.

Another important strategy to define in an ecosystem is the channel strategy which covers certain sales and marketing aspects. An example of what needs to be defined here is how the communication with the customer is executed and which party in the ecosystem is the point of contact for customers. Apart from this, marketing activities and services like implementation at the customer site need to be agreed upon (Avila & Terzidis, 2016). SAP has defined these points clearly. Partners are obligated to channel all their sales efforts and marketing activities through SAP structures to have controllability and visibility into which customers are pursued, what revenue is expected, and which marketing activities are running and in pipeline. This also ensures SAP is receiving the agreed revenue cuts from deals closed by partners. The higher on the partner progression the partner sits, the more SAP orchestrates sales and marketing activities themselves. Implementation and consulting services for customers are largely covered by partner companies since there are too many customers and implementation projects across the globe for SAP to handle themselves.

Since this report is focused on the sales and marketing side of running an ecosystem, it is important to mention practical aspects to the collaboration between partners and the core company on sales and marketing. There are still many ecosystems that use Excel spreadsheets, Word documents or E-mail communication to share data with their ecosystem partners and to facilitate the collaboration. This is inefficient and can cause data redundancies and outdated data being used to make decisions and forecast. It can be highly useful to leverage a dedicated system to drive this collaboration on sales and marketing to have a single source of truth for the users. The data is real-time, always on the latest status and the data exchange between the companies becomes more automatized and efficient (WorkSpan, 2020). SAP has deployed WorkSpan as such a collaboration tool. It has a central repository for uploading sales opportunities and marketing activities that can also be imported from CRM. It's real-time and acts as a solid tool for partners to get visibility into SAP's CRM data. It's also a good "one stop shop" for internal and external users for reporting needs and collaboration on certain opportunities and marketing activities. However, since it's a third-party tool, there are issues of adjusting

the tool exactly to the specific SAP business processes needed. The Software Partner Solutions team has dedicated WorkSpan admins working on improving and adjusting the tool together with WorkSpan's development team, but some change requests are not able to be tackled fast enough which can lead to a decline in the adoption of the tool among the users. There is sometimes not enough bandwidth and resources available within the WorkSpan admins and the development team to implement all the requests by the users and to ensure a perfectly smoothly running system. An internally developed solution could be a solution since it would be managed by SAP's IT department, as CRM is, and there would be more accountability for the tool to work smoothly and more resources available to fix problems and requests. The tool would be developed much more specifically to fit SAP's needs.

5.2.3 Risks and Challenges

One of the risks that the ecosystem orchestrator faces is a loss of control over certain processes since they do not occur completely within the boundaries of the company. This can lead to quality issues with the product or service and the ecosystem at whole can suffer a reputation loss (Hennessy, n.d.). To combat this, SAP closely monitors partner solutions and services and only if the quality is confirmed they can keep their spot in SAP's portfolio. The quality of products or services is thus usually not a problem.

Concerning, data security, sensitive data can sometimes not be handled with the appropriate caution within an ecosystem, leading to sharing sensitive data with parties that should not get visibility into that data (Hennessy, n.d.). This can at times be an issue that SAP faces. Specifically on the sales side, certain SAP colleagues have visibility into all sales data from all partners to be able to create reports for partners. There is a potential for human error where reports gets sent to the wrong partner who then has visibility into another partner's sales data. This is an issue that Partner Ecosystem Success at SAP is aware of. There are active efforts to automatize these reports as much as possible to eliminate this element of human error.

A relevant risk that ecosystems face are channel conflicts. As mentioned before, the ecosystem orchestrator has to decide on a product and channel strategy which may be part of the contractual agreements that are drawn up between the core company and the partners. As mentioned by one of the interviewees, SAP may have an internal channel conflict at times where the internal sales department is more inclined to sell SAP-native

software instead of including partner solutions on the deal. This can be due to additional complications that can arise from including partners on the deal. However, at a broader scale, SAP misses out on the scalability and synergistic effects that the ecosystem provides. SAP is actively trying to combat this by financially incentivizing sales representatives to sell partner software and by the board and CEO making all of SAP aware of the importance the ecosystem will play in the future. Another channel conflict that can occur is when the ecosystem orchestrator is not able to capture the value of the partner sales, for example when the partner sells directly to the customer (Williamson & De Meyer, 2012). One interviewee brought up that some SAP ecosystem partners try to follow this approach of selling directly to a customer without going through SAP structures at times. This results in a loss of revenue and visibility into which customer bought which solution. SAP actively prevents this by using clear contractual agreements on what processes have to be followed. They keep the right of releasing partners if they do not adhere to these rules. Furthermore, a close collaboration with the partner can reveal this type of behavior.

As for the product strategy, the literature mentions that it has to be clearly defined and followed (Avila & Terzidis, 2016). This avoids any fallouts between the core company and its partners. One of the interviewees mentioned that SAP calls out white spaces for partners to develop on. However, it may happen that SAP development discovers this white space for themselves and they follow their own interests by starting to develop a solution for this white space which causes a massive drop in revenue for the partner and the ecosystem organization. This can have a massive negative impact on the ecosystem as a whole. As discussed in the analysis, this product strategy conflict is difficult to avoid since different departments and interests within SAP are involved. It will usually have to be solved at a higher managerial level when it is discovered.

5.3 Limitations and further Research

This project report approached the concept of ecosystems from the perspective of a large enterprise software vendor, SAP. It combined the literature that exists on this topic and found connections and differences in practical execution at the company. It has to be mentioned that the conclusions gained are highly context specific for SAP's case. Every ecosystem can be set up and run using a vastly different approach.

For future research, the conclusions of this report would have to be re-evaluated in a different context to get a more complete understanding of ecosystems in practical application. The first suggestion would be to pick out another large software company which might be a competitor of SAP and deep dive into their ecosystem structure to understand differences in decisions and management of the ecosystem. It would then be highly valuable to evaluate what impact the differences in the ecosystem structure and practices have on the success of the ecosystem and the company as a whole. Another insightful research would be to go into other industries, for example the automotive industry, and juxtapose the existing literature with the practices followed there. Since the literature in this report mostly refers to software ecosystems, different literature sources would have to be explored. It should be expected that since the business model is vastly different, the organization and running of the ecosystem will also differ. Taking into consideration the findings of this report, it would paint a more complete picture of ecosystems across industries and give key takeaways for companies to apply in their ecosystem.

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