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By acquiring complementors, digital platform owners can facilitate rapid advances in the evolution of their platform ecosystems. We describe how Salesforce has successfully evolved its platform ecosystem through the acquisition of complementors. Based on insights from the Salesforce case, we provide recommendations for acquiring complementors, aligning acquisitions with the platform owner's proprietary developments, integrating the acquired complementors and retaining the coherency of the platform's offerings even after diverse acquisitions.[1,2,3]

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Acquiring Complementors Is Crucial for Platform Ecosystem Evolution

Digital platforms are transforming many industries. Examples include mobile telephony (e.g., iOS, Android), video games (e.g., PlayStation, Xbox) and enterprise software (e.g., Salesforce, SAP).[4] As software-based systems, digital platforms offer a core functionality upon which peripheral firms or individuals can develop complementary add-ons and extend the functionality of the platform.[5] A digital platform sits at the center of an ecosystem that includes the platform owner (i.e., operator), complementors (e.g., third-party developers) and customers.[6]

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3 The research reported in this article has been supported by the Swiss National Science Foundation (SNSF).

4 For an overview of the impact of digital platforms on different industries, see de Reuver, M., Sørensen, C. and Basole, R. C. "The Digital Platform: A Research Agenda," *Journal of Information Technology* (33:2), April 2017, pp. 124-135.

5 For a detailed definition of digital platforms, see Tiwana, A., Konsynski, B. and Bush, A. A. "Platform Evolution: Coevolution of Platform Architecture, Governance, and Environmental Dynamics," *Information Systems Research* (21:4), December 2010, pp. 675-687.

6 For a comprehensive understanding of platform ecosystems, see Jacobides, M. G., Cennamo, C. and Gawer, A. "Towards a Theory of Ecosystems," *Strategic Management Journal* (39:8), March 2018, pp. 2255-2276.

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A platform ecosystem evolves as the owner continually improves the platform's technology and functionalities, complementors make new and diverse contributions to the ecosystem and customers' requirements change. To guide the evolution of the ecosystem, platform owners need to act as orchestrators as they continuously improve the platform's technology and functionalities in response to complementors' and customers' needs.

Platform owners commonly orchestrate the evolution of ecosystems through proprietary developments to improve their platforms' technology and functionalities. However, a platform owner's ability to keep up with fast and diverging technological changes through internal innovation is limited because proprietary developments are often time-consuming and have uncertain outcomes.[7] To complement their proprietary developments, platform owners therefore often choose to acquire complementors so they can include already-developed innovations and capabilities in the platform. Examples of this evolution strategy include Microsoft and Sony acquiring game developers for their gaming platforms, Netflix acquiring content providers for its streaming platform,[8] Salesforce acquiring online marketing software provider ExactTarget, SAP acquiring e-commerce software provider Hybris, and Adobe acquiring marketing automation software provider Marketo.

In general, acquisitions help organizations quickly grow their market share and realize synergies with respect to size, geography, assets, people or competencies, thereby creating value.[9] Our focus, however, is on digital (i.e., software) markets where acquisitions can be more flexibly absorbed, compared to traditional markets.[10] Digital markets are shaped by digital technologies, which are inherently dynamic because they can be reprogramed—for instance, by implementing new interfaces or updating the firmware. This reprogrammable nature, in combination with a modular technological architecture that allows a system to be decomposed into loosely coupled components, enables a digital platform to evolve because it can be continually reconfigured with new components from acquired complementors.[11]

Moreover, digital platform markets have important additional properties. In particular, they are characterized by "winner-take-all" competition, often with only a few thriving platforms surviving, resulting in fierce competition among platform owners to be the first to secure (i.e., acquire) essential resources. Hence, the attraction of acquisitions enables a platform owner to quickly lock-in key third-party complementors' resources in the ecosystem and integrate their solutions into the platform's core offerings. Examples of platform owners competing to acquire complementors include Microsoft and Salesforce competing to acquire Slack and LinkedIn, and Adobe and Salesforce competing to acquire ExactTarget and Marketo.

Furthermore, the evolution of a platform ecosystem is contingent on a plethora of loosely coupled and independent players that opportunistically pursue their own goals and interests. These ecosystem players are essential for the overall value provided by a digital platform; thus, the platform owner must continuously align all players' interests to ensure that they are motivated to participate in the ecosystem. As a consequence, acquisitions also entail risks because they may unintentionally change the dynamics within and between ecosystem players and influence some of their incentives for participating in the ecosystem.

However, one challenge for platform owners is not having control of potentially crucial resources that are owned by complementors.

7 For a discussion of the potential challenges platform owners face with proprietary developments, see Toppenberg, G., Henningsson, S. and Eaton, B. "Reinventing the Platform Core through Acquisition: A Case Study," *Proceedings of 49th Hawaii International Conference on System Sciences (HICSS)*, 2016, pp. 4634-4643.

8 For a detailed understanding of platform owners' acquisitions in the context of consumer-focused platforms, see Miric, M., Pagani, M. and El Sawy, O. A. "When and Who Do Platform Companies Acquire? Understanding the Role of Acquisitions in the Growth of Platform Companies," *MIS Quarterly*, forthcoming.

9 For information about the potential benefits from acquisitions, see Epstein, M. J. "The Determinants and Evaluation of Merger Success," *Business Horizons* (48:1), February 2005, pp. 37-46.

10 For more details about the characteristics of digital markets, see Gao, L. S. and Iyer, B. "Analyzing Complementarities Using Software Stacks for Software Industry Acquisitions," *Journal of Management Information Systems* (23:2), October 2006, pp. 119-147.

11 For more details about the modularity of technological architectures, see Yoo, Y., Henfridsson, O. and Lyytinen, K. "The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research," *Information Systems Research* (21:4), December 2010, pp. 724-735.

Table 1: Salesforce's Customer 360 Modules and Capabilities

CRM Core Module or Capability*		Description
CRM Core Modules	Sales Cloud	• Includes tools for contact management, sales force automation, sales forecasting and productivity • Prioritizes tasks and manages sales cycles and customer relationships
	Service Cloud	• Enables customer service efficiency across channels both by creating a single view of a customer's activity and by the use of tools for field service, web chat and social media-based customer service
	Marketing Cloud	• Includes tools for email marketing, social media marketing, mobile marketing, online advertising and marketing automation • Provides a unified view of customers to create personalized, omnichannel customer journeys
	Commerce Cloud	• Comprises Salesforce B2C Commerce and Salesforce B2B Commerce, which are often used together • Creates personalized and unified buying experiences across multiple channels (e.g., mobile, social media, web and store)
	Analytics Cloud	• Connects data from different sources to bring CRM data together in one place • Creates visualizations to turn complex data into digestible snapshots
	Integration Cloud	• Connects systems, Salesforce or not, whether in the cloud or on-premise, on a unified platform • Discovers and reuses integration assets to build upon prior projects
	Platform	• A single and scalable development environment on which businesses can build and deploy their own applications • Enables Salesforce products to be customized to business needs
	Industry Cloud	• Customizes Salesforce's core modules for specific industries to streamline workflows, deliver targeted service and drive customer engagement
	Learning Cloud	• A mobile-friendly learning platform to enable employees to learn Salesforce, with assignments, ranks and leaderboards
	Employees Cloud	• Leverages team productivity by enabling teams to work together and by combining documents, spreadsheets and real-time chat inside Salesforce
	Partners Cloud	• AppExchange, Salesforce's marketplace for complementary applications with a plethora of solutions
Cross-Module Capabilities	**Einstein**	• Enables the use of AI technology across Salesforce CRM core modules • Enables Salesforce clients to identify patterns, trends and the cause of unexpected business outcomes
	Single Source of Truth	• Allows Salesforce clients to create a single source of truth for their data

*Modules and capabilities shown in bold are derived from, or considerably influenced by, acquisitions

The winner-take-all nature of digital markets and the fact that complementors are often involved in several competing platform ecosystems mean that platform owners must aggressively pursue acquisitions to ensure they can exclusively secure (and control) certain resources before their competitors. Thus, the way in which platform owners conduct acquisitions significantly

shapes their competitive position and how their ecosystems evolve.

In this article, we provide guidance for digital platform owners on how to strategically acquire complementors, how to leverage those acquisitions for major advances in the platform ecosystem's evolution, and how to manage the implications of acquisitions for both acquired complementors and customers. This guidance is derived from our analysis of Salesforce's acquisitions of several platform complementors. (The research carried out for this case analysis is described in the Appendix A, and the relationship between our study and other research on platform ecosystems is described in Appendix B.) Salesforce is a provider of enterprise software and, as such, its platform ecosystem delivers complex products and services that require numerous highly specialized complementary resources that cannot be provided by the platform owner alone.

After presenting a brief overview of the Salesforce platform ecosystem, we describe the key acquisitions that have significantly influenced Salesforce's evolution. For each acquisition, we identify what motivated Salesforce to acquire the complementor, the integration approach adopted and the added value gained. Next, we analyze how Salesforce employed these acquisitions, both as a strategy and as a mechanism for enabling platform ecosystem evolution. We then identify the ecosystem-wide challenges that Salesforce faced with regard to its clients and acquired complementors. Based on our analysis of Salesforce's acquisitions, we provide four recommendations for platform owners seeking to acquire platform complementors.

Brief Description of the Salesforce Platform Ecosystem

Salesforce is a prime example of a thriving platform ecosystem in the enterprise software industry. The business originated in 1999 when its primary value proposition was a sales-related software module (now known as Sales Cloud). Today, Salesforce has evolved into a firm that provides integrated customer relationship management (CRM) solutions with a diverse set of modules and capabilities. Its main offerings are packaged together as Customer 360, with different core modules related to a broad range of functionalities such as sales, customer service, marketing and e-commerce (see Table 1). The cross-module capabilities offer functionalities that can be accessed within the different core modules. All customer data can be aggregated across the different modules to create an innovative cross-channel customer experience through the combination of functionalities from different modules.

To enable complementors to sell complementary enterprise applications to its clients, Salesforce launched AppExchange, its commercial marketplace, in 2005 (notably before big players in the business-to-consumer market such as Apple's App Store in 2008 or Google Play for Android in 2012). To date (2021), Salesforce has attracted more than a million registered developers, with over 3,000 enterprise applications currently offered on AppExchange. Furthermore, Salesforce has several collaborations with partners external to its ecosystem to integrate their offerings into the Salesforce platform ecosystem (e.g., with Microsoft to integrate its calendar). Moreover, Salesforce can call on registered implementation consultancy providers, who support its clients in complex implementation projects. These offerings, provided both by Salesforce (the platform owner) and by complementors, have attracted more than 150,000 clients to the Salesforce platform ecosystem, ranging from small businesses to large multinational enterprises. Clients can license different modules on a pay-per-use basis and further extend the functionalities of these modules by licensing applications provided by complementors. Salesforce, as the platform owner, plays the role of orchestrator in the interplay of the various players in the platform ecosystem.

Key Acquisitions Made by Salesforce

Salesforce's evolution to become a leading platform ecosystem in the enterprise software industry is due in no small part to over 60 acquisitions of complementors.[12] The acquisitions (some of which we classify as key) were made

12 For a full list of acquisitions, see Salesforce's Wikipedia entry, available at https://en.wikipedia.org/wiki/Salesforce#Acquisitions.

for different reasons, integrated into Salesforce's CRM core modules and capabilities in various ways and resulted in different added values for the ecosystem's players. Below, we describe the key acquisitions to illustrate how Salesforce used them to complement its proprietary developments in various areas. Together, these key acquisitions have had considerable impacts on the evolution of Salesforce's CRM core modules or capabilities.

Acquisitions of ExactTarget and Evergage

In 2012, Salesforce launched Marketing Cloud, a proprietary development to support marketing campaign management that enabled its clients to automatically contact selected target groups. Due to its limited capacity of about 2,000 emails per day, the tool mainly supported small- and medium-sized firms and was only of limited use for large multinational enterprises. One year after the launch of Marketing Cloud, Salesforce acquired ExactTarget, a leading provider of online marketing solutions. Through this acquisition, Salesforce's clients benefitted not only from increased capacity but also from additional functionalities. For example, ExactTarget provides a customer journey builder that allows Salesforce clients to filter potential leads according to predefined segmentation criteria (e.g., selected regions, industries) and observe the resulting segment size in real time.

By integrating ExactTarget's industry-leading cross-channel marketing automation and campaign management capabilities into Marketing Cloud, Salesforce's offering became a leading full-service digital marketing tool. Furthermore, the acquisition of ExactTarget enabled Salesforce to leverage its existing core modules (particularly Sales Cloud and Service Cloud) to build personalized customer engagement by integrating digital advertising with data across different modules.

Personalization, a key feature of Marketing Cloud, was also significantly influenced by the acquisition of Evergage. Prior to this acquisition, Salesforce had already developed Interaction Studio, a real-time engagement tool that helps clients visualize, track and manage their customers' experiences so they can deliver relevant content at every stage of the customer journey. While Interaction Studio (a component of Marketing Cloud) already offered a few personalization features, clients increasingly required more advanced recommendation features to simplify the identification of promising products.

To meet this need, Salesforce acquired Evergage, a provider of omnichannel personalization and customer experience software that enables the creation of a single, comprehensive view of each customer and prospect across channels. Compared to the initial version of Interaction Studio, Evergage uses advanced deep analytics and machine learning to leverage customers' personalization and provide automated recommendations.

To start with, Salesforce offered Evergage to clients as an alternative version of Interaction Studio before replacing it with Evergage and renaming it Interaction Studio (Version 2). A master enterprise architect at Salesforce explained some of the improvements that resulted from the acquisition of Evergage:

> *"Evergage today is called Interaction Studio (Version 2). We had an Interaction Studio (Version 1), which is the one we developed ourselves. … Version 2 is a completely different offering because we needed much more than just personalization. It's a real-time action, CDP [customer data platform] database, so anonymous, unknown profiles, and things that are not necessarily part of a narrow personalization tool. … We phase out the old one [Version 1] if we see that the new one [Version 2] has an advantage. In between, we offer both … to our customers and we position one or the other depending on the use case."* Master Enterprise Architect, Customer Success Group

Acquisition of Demandware

Initially, Salesforce did not have a full e-commerce solution. While some e-commerce features were already available in Salesforce's other core modules (e.g., a business-to-business (B2B) order management tool in Sales Cloud), these features did not fulfill the requirements of business-to-consumer (B2C) transactions, which can reach a volume of millions of transactions per hour at peak times. Salesforce lost several

deals to Oracle, one of its main competitors, because Oracle already offered comprehensive e-commerce functionality.

To provide e-commerce functionality, Salesforce acquired Demandware, a provider of an industry-leading and cloud-based e-commerce solution. By enabling the management and execution of in-store transactions, as well as creating and coordinating digital transactions across all channels, Demandware allows Salesforce clients to merge physical and digital selling experiences. Salesforce rebranded Demandware's offering as Commerce Cloud and launched this new CRM core module in 2016. Through the acquisition of Demandware, Salesforce was a step closer to becoming the one-stop-shop customer interaction ecosystem for enterprises.

Acquisition of Tableau

In 2014, Salesforce launched Analytics Cloud, a proprietary development for data analysis and reporting, which was designed to operate with data generated in Salesforce's modules. However, clients often needed to leverage Salesforce data with data from other sources, such as structured databases, unstructured sources like spreadsheets or data warehouses.

To meet this requirement, Salesforce acquired Tableau, a leading provider of analytics software. This acquisition significantly boosted the capabilities of Analytics Cloud. As an enterprise-wide (and not merely CRM-focused) strategic data analysis tool, Tableau improves clients' ability to access data from different systems. This acquisition not only further reduced the data delivery time, but also made it possible for analytics to be developed and consumed by employees at all skills levels. In addition to deploying Tableau's technical functionalities, Salesforce also benefitted from Tableau's established position in the market—the company was already known to a large portion of existing Salesforce clients' senior executives. Salesforce currently still uses the Tableau brand because of its popularity among Salesforce clients.

Acquisition of MuleSoft

Salesforce needed to provide seamless integration among the platform's modules and with external IT systems and thus needed to develop and improve integration technology. To provide the necessary technology, Salesforce acquired MuleSoft, a leading integration platform with its own marketplace for application programming interfaces (APIs). MuleSoft's ability to connect any two IT systems both inside and outside of the Salesforce ecosystem significantly extended Salesforce's integration capabilities. The MuleSoft technology also streamlined the integration of existing and prospective acquisitions with Salesforce's existing offerings.

Salesforce further developed MuleSoft's integration capabilities and used them as the basis for a proprietary development called Integration Cloud, which is now an integral part of Salesforce's CRM core modules. The MuleSoft capabilities were particularly useful for Salesforce's larger clients with complex IT infrastructures (e.g., on-premise software that needs to be connected to Salesforce modules). As with Tableau, Salesforce still uses the MuleSoft brand because of its global popularity.

Acquisition of Heroku

Back in 2005, Salesforce launched a development environment called Force.com to enable complementors to create their own applications using an object-oriented programming language. However, complementors increasingly demanded more flexibility and further options in their application development. In order to meet these demands, Salesforce acquired the Heroku development environment, which enables complementors to use various open-source programming languages to build their applications. Heroku is a leading application platform for Ruby, a popular programming language for cloud-first applications that are collaborative and deliver real-time access to information across mobile devices.

With the Heroku acquisition, complementors benefitted from a more flexible development environment as well as from access to the rapidly growing community of Ruby developers. In addition, Heroku enabled Salesforce's clients to more flexibly customize their own applications.

Acquisition of Vlocity

Over the last five years, Salesforce has been strategically reorienting toward industry-specific offerings in response to its clients increasingly

asking for more features tailored to their industries. A first major step was a proprietary development called Industry Cloud, with a focus on financial services, healthcare, manufacturing and consumer goods sectors.

To gain a foothold in additional sectors, in 2021 Salesforce acquired Vlocity, one of the largest and fastest-growing complementors, which is active in six industries (communications, media and entertainment, energy and utilities, insurance, healthcare and government). A senior executive at Salesforce explained some of the reasons why Salesforce decided to acquire Vlocity:

> *"Salesforce has for the last … five years been … investing heavily into industries. That's from our go-to-market strategy of how we organize our sales teams and our marketing, but also in building products. There are so many business processes that a manufacturer expects and a financial services company expects. So, Salesforce has built a portfolio of industry solutions over the last five plus years, but if you go back in time [before] we partnered with Vlocity, basically we didn't have any, or we were just getting started. So, we needed kind of a multiple pass to get into the industry markets that we were not in previously or not to the extent that we needed and wanted to be."* Senior Executive, AppExchange & ISV Enablement

Salesforce's Industry Cloud greatly benefitted from Vlocity's expertise in vertical industries. Vlocity enables organizations to digitally transform while delivering industry-specific processes and data models across any channel, ultimately helping clients increase sales, and improve their service and marketing agility, and operational efficiency.

Acquisitions of Quip and Slack

In the area of collaboration tools, Salesforce first introduced Chatter, a social collaboration service that enabled employees of Salesforce clients to share expertise, documents and data. However, clients increasingly needed additional collaboration options for small and medium-sized teams, particularly to support the growing trend for working from home. To meet this need, Salesforce acquired Quip in 2016, a productivity software company. The Quip tool allows Salesforce clients to standardize, automate and integrate documents into a central location for real-time collaboration. More recently, in 2020, Salesforce also acquired Slack, a provider of communication and collaboration software that offers a modern chat client to facilitate real-time interaction in teams and thus helps clients to increase employee productivity. Slack offers integration with leading document software (e.g., Google Drive) and has already created a strong developer community that provides complementary applications.

Based primarily on Quip's functionality and also on some of Chatter's social collaboration features, Salesforce launched Employees Cloud in 2017, a CRM core module that focuses on collaboration between employees and teams. Salesforce is currently planning to integrate Slack's features into Employees Cloud to extend the functionality of this module. Moreover, since a large number of developers providing complementary applications for Slack have joined the Salesforce ecosystem, Salesforce is also benefitting from a higher number of complementors.

Acquisition of Several Small AI Firms

Salesforce's CRM modules create massive amounts of sales data, and its clients often need to hire data scientists to analyze this data to predict outcomes. Salesforce recognized that this need presented a market opportunity and initiated the development of an automated, machine-learning-based platform that can predict outcomes in real time. To facilitate this development, Salesforce acquired several small companies providing artificial intelligence (AI) solutions and used their products and expertise as the basis for building Einstein. Einstein is an AI technology-enabled capability that is integrated into Salesforce's CRM core modules and can be accessed by clients through different modules and features. Because Einstein's AI capability can be used in all the core modules, it considerably increases clients' efficiency.

Table 2: Salesforce's Key Acquisitions by Core Module or Capability, Main Acquisition Drivers and Impacts on Ecosystem Players

Core Module or Capability: Acquisitions		Acquisition Driver	Impacts of Acquisition on Ecosystem Players
CRM Core Modules	Marketing Cloud: • ExactTarget • Evergage	• New client requirements: higher capacity and more recommendation features	• Increased client value: new functionality
	Commerce Cloud: • Demandware	• Increased competition: major competitors had already successfully entered the e-commerce market	• Increased client value: new functionality
	Analytics Cloud: • Tableau	• New client requirements: manage data from external IT systems, not only from existing core modules	• Increased client value: new functionality • Helped Salesforce considerably increase the number of clients
	Integration Cloud: • MuleSoft	• New client and complementor requirements: seamlessly integrate data across existing core modules and external IT systems	• Increased client and complementor value: improved integration of data and applications across internal and external IT systems
	Platform: • Heroku	• New complementor requirements: higher flexibility in application development	• Increased complementor value: more options to develop applications • Increased client value: more options to customize applications • Helped Salesforce increase the number of complementors (Heroku already had a large community)
	Industry Cloud: • Vlocity	• New client requirements: industry-specific functionalities • Phenomenal growth of a complementor in the ecosystem	• Increased client value: existing functionality is more tailored toward specific industries
	Employees Cloud: • Quip • Slack	• New client requirements: more tools for collaboration in teams • Market opportunity: trend toward working from home	• Increased client value: new functionality • Helped Salesforce increase the number of complementors (Slack already had a large community)
Cross-Module Capabilities	Einstein: • Several small AI firms	• Market opportunity: trend toward more automated analytics capabilities	• Increased client value: new functionality that can be used across core modules

Summary of Impacts of the Key Acquisitions

Table 2 shows which of the CRM core modules or capabilities each of the key acquisitions described above was incorporated into and summarizes the main drivers of the acquisitions and the impacts they had on different ecosystem players (i.e., Salesforce, complementors and clients).

Analysis of How Salesforce Employed the Acquisitions

Each of Salesforce's acquisitions was made for a specific strategic intent and each was purposefully integrated into Salesforce's proprietary developments. The acquisitions can therefore be perceived both as a strategy to delineate distinct strategic directions for the platform ecosystem's evolution, and as a mechanism for enabling advancements in each of the strategic directions of evolution.

Employing Acquisitions as a Strategy. Salesforce employed acquisitions as a strategy for evolving the platform's core offerings in three distinct strategic directions: 1) extending the platform's core technology, 2) extending the platform's functional scope, and 3) widening the platform's industry-specific specialization. The first strategic direction aims to add new or considerably improve the platform's existing core technology elements, such as the application development environment and integration technologies. A major objective of this direction is to provide capabilities that enable the different ecosystem players to leverage the integration of data and services.

The second strategic direction for platform ecosystem evolution (extending the platform's functional scope) aims to develop (or extend) platform modules or capabilities that are relevant for all clients. The third strategic direction (widening the platform's industry specialization) is characterized by acquisitions that focus on industry-specific features that are relevant for particular clients. From Salesforce's early days, its platform evolved in the first two strategic directions in parallel. The third strategic direction emerged over the last few years.

Employing Acquisitions as a Mechanism. Salesforce also employed acquisitions as a mechanism for implementing major advancements in each of the three strategic directions for platform ecosystem evolution. The mechanisms can be understood through the interplay between acquisitions and proprietary developments. Acquisitions can either boost existing proprietary solutions or trigger new proprietary developments. In the former case, Salesforce initially developed proprietary solutions that were subsequently and significantly enhanced (or replaced) by acquisitions. In the latter case, Salesforce did not have existing proprietary solutions but created new ones based on the acquisitions. In both cases, the developments related both to CRM core modules and to platform capabilities that can be used across the core modules.

Table 3 illustrates how Salesforce's key acquisitions map onto the three strategic directions for platform ecosystem evolution and how they initiated new or boosted existing proprietary developments. Note that because the third strategic direction (widening the platform's industry-specific specialization) is relatively new, there are fewer examples in this category.

In addition to employing acquisitions as a strategy and a mechanism for driving platform ecosystem evolution, Salesforce's acquisitions illustrate how they can also be used to expand the platform's reach (in terms of ecosystem player groups) and range (by providing new functionalities that were previously not included in the platform's scope). The majority of Salesforce's acquisitions increased the platform's range (e.g., Demandware provided e-commerce functionalities, Quip provided collaboration functionalities and ExactTarget provided additional marketing functionalities).

Some acquisitions expanded the platform's reach by increasing the number of platform users in at least one of the ecosystem's group of players (i.e., complementors or clients). Expanding reach is particularly important because of the winner-take-all nature of digital platform markets and also the network effects that require platform owners to rapidly scale their platform business. Salesforce's acquisitions of Slack and Heroku increased the number of complementors in the ecosystem because both had already built strong developer communities, and the acquisition of Tableau increased the number of clients because

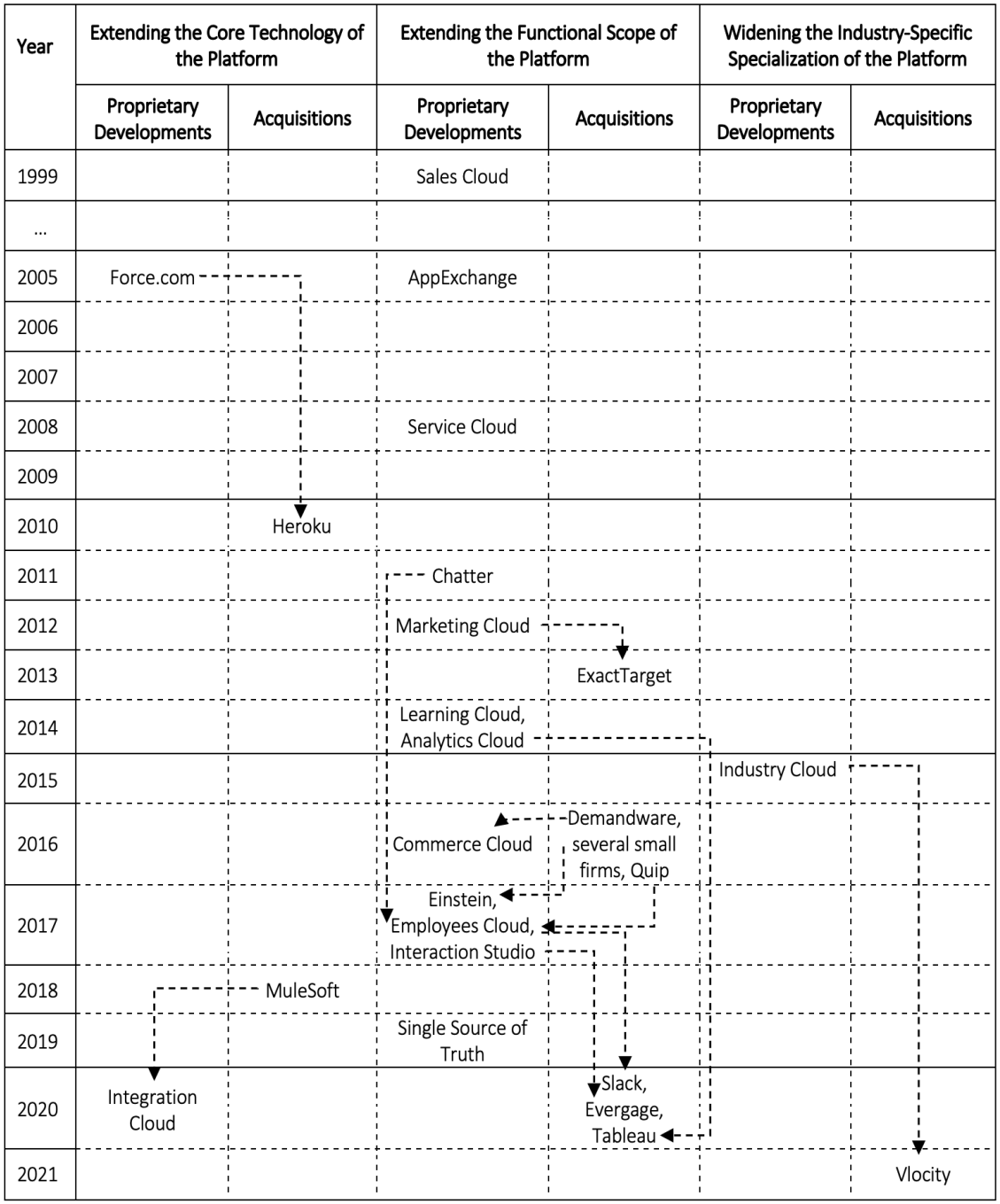
Table 3: Salesforce's Use of Acquisitions as a Strategy and a Mechanism for Driving Platform Ecosystem Evolution

Strategic Direction	Mechanism	Acquisition Employed
Extending the Core Technology of the Platform	Boost an existing proprietary development	Enabling complementors to access open-source development languages by acquiring a flexible development environment (Heroku) in addition to an existing proprietary development environment (Force.com)
	Trigger a new proprietary development	Developing a CRM core module (Integration Cloud) based on the offerings of an acquired complementor (MuleSoft) that provides an integration technology and features such as a marketplace for APIs and interface builders
Extending the Functional Scope of the Platform	Boost an existing proprietary development	Extending a CRM core module in the field of online marketing (Marketing Cloud) by acquiring ExactTarget, a provider of marketing automation and campaign management software
		Extending the functionalities of a real-time interaction feature (Interaction Studio) of a CRM core module (Marketing Cloud) by acquiring Evergage, a provider of an omnichannel personalization and customer experience software
		Extending a CRM core module providing data management and analytics (Analytics Cloud) by acquiring Tableau, a provider of data management and analytics software
		Extending a CRM core module providing collaboration features (Employees Cloud) by acquiring Slack, a provider of communication and collaboration software
	Trigger a new proprietary development	Developing an e-commerce CRM core module (Commerce Cloud) based on the solution provided by Demandware, an acquired complementor
		Developing a collaboration CRM core module (Employees Cloud) based primarily on Quip, an acquired productivity software company, but also on some of the functionalities of in-house developed social collaboration software (Chatter)
		Developing an AI technology-enabled platform capability (Einstein) based on the AI technologies of several acquired small complementors
Widening the Industry-Specific Specialization of the Platform	Boost an existing proprietary development	Extending a CRM core module with a focus on industry-specific functionality (Industry Cloud) by acquiring Vlocity, a provider of industry-specific solutions
	Trigger a new proprietary development	n/a

Tableau had already attracted thousands of customers around the world.

Finally, Figure 1, which also groups the key acquisitions described above by strategic direction for platform ecosystem evolution, shows the timeline for these acquisitions. The arrows in the figure indicate whether an acquisition initiated a new proprietary development (arrow starts at acquisition) or boosted an existing proprietary solution (arrow ends at acquisition).

Figure 1: Salesforce's Acquisitions by Strategic Direction of Platform Ecosystem Evolution and Interplay with Proprietary Developments



Ecosystem-Wide Acquisition Challenges

Despite their undeniable potential for driving platform ecosystem evolution, acquisitions pose considerable risks and challenges for platform owners. These challenges are related to the implications of acquisitions both for

Table 4: Ecosystem-Wide Acquisition Challenges Faced by Salesforce and Actions Taken

	Context	Challenge	Actions Taken
Clients	Dynamics of the platform's offerings: • Platform offerings grew rapidly over the last years • Several acquisitions mirrored existing proprietary developments	Overlapping offerings caused confusion among clients: • Difficulty in understanding Salesforce's core offerings • Difficulty in identifying the right module or feature for a specific functionality	Improve the implicit and explicit communication of offerings: • Present products and services in the comprehensive Customer 360 overview (including acquisitions) • Introduce new features to clients at major events • Support clients with an online learning platform • Enable architects and implementation partners to support clients
Cross-Module Capabilities	Diversity of acquired complementors: • Salesforce acquired various types of complementors • Variety of complementors has both technical and business implications	No uniform integration strategy: • Diversity of complementors requires different integration processes • Not feasible to define an optimal, uniform integration strategy (i.e., a reference process)	Apply a flexible approach to integration: • Adjust integration process depending on particularities of an acquired complementor (e.g., infrastructure, branding, licensing)

its clients and the acquired complementors. Table 4 summarizes the two major ecosystem-wide acquisition challenges that Salesforce encountered and the actions it took in response to these challenges. These two challenges and actions are described in detail below.

1. Clients Confused by Several Overlapping Offerings

Salesforce purposefully created synergies between acquisitions and its own proprietary developments. But because the platform offerings had been continuously extended over the years, there were several cases where the specific functionality provided by an acquisition overlapped existing functionality. As a result, it was challenging for clients to understand what Salesforce's core offerings were and which functionality can be found in which module or feature. In particular, there was confusion about three CRM core modules and the acquisitions relating to them: Analytics Cloud related to the acquisition of Tableau; Employees Cloud related to the acquisitions of Quip and Slack; and Marketing Cloud related to the acquisition of Evergage (specifically, Interaction Studio with its focus on personalization).

When Salesforce acquired Tableau to extend the functionalities of its existing Analytics Cloud CRM core module, it already had Einstein to provide AI capability. In general, Tableau and Einstein are tailored to different use cases. While Tableau helps to connect large data volumes from different Salesforce systems without the need for migrating to other clouds, Einstein is optimized to empower users to make predictions and drive actions. Nevertheless, clients sometimes confused the two:

> *"I think it is confusing because very often … the path is not simple, because on one hand you have the business people, they know*

> *the requirements, but they don't know the technology. Then you have the people who know the technology, but who don't know the requirements. … Often, I see architects [who] propose the wrong solution. For example, sometimes people use Einstein analytics to do enterprise end-to-end reporting and then collect tons of data, put it into Einstein, because Einstein has a global data warehouse and to do this type of reporting.*" Salesforce's Program Architect Director, Customer Service Group

Despite the distinct functionalities of Tableau and Einstein, Salesforce needed to significantly improve the communication about these offerings to clients.

There was also client confusion about the functionality provided by Employees Cloud. When Salesforce acquired Quip and more recently Slack, it already had Chatter, its own proprietary system. Even though there are differences in their functionalities, there is also a degree of overlap when they are used for collaboration among small teams (i.e., between Quip and Slack) or as channels to structure group discussions (i.e., between Chatter and Slack). These overlaps led to some confusion among clients.

Clients were also confused by Salesforce's personalization offering, Marketing Cloud. Salesforce acquired Evergage to replace its in-house development, Interaction Studio. After a trial period during which both tools were offered as alternatives, the proprietary development was discontinued and Evergage was renamed as Interaction Studio (Version 2). From a client's perspective, it was particularly challenging to understand the differences between the two products during the integration process. As with the other two sources of client confusion, the problem was not related to missing features but to the communication of the comparable functionalities to clients. Specifically, the provision of multiple offerings in the same CRM core module caused some confusion, thereby reducing clients' efficiency and increasing the need for Salesforce to provide services that enable clients to keep track of all the functionalities of the platform's various modules and capabilities.

In response to this need, Salesforce took several actions. First, it implemented the Customer 360 overview, which communicates to clients an all-embracing picture of all the various offerings. This one-stop-shop approach significantly increased convenience for clients because all the modules and capabilities are consolidated into a comprehensive view regardless of their diverging technical infrastructures. Salesforce continuously integrates new acquisitions, or some of their functionalities, into Customer 360.

Second, in addition to the overview communicated through Customer 360, new features are also explicitly communicated to clients at Salesforce's major events, such as the annual Dreamforce conference, or during local road shows. The purpose of these events is to explain the new features and their possible application areas and major functionalities. The information communicated at these events is complemented by a major proprietary development called Trailhead, which is an online learning system, with participants in the online courses being awarded certificates. Third, Salesforce has launched several programs to enable clients to keep track of the offerings and to incentivize its implementation partners to communicate and explain new features.

2. Acquired Complementors Have Different Integration Requirements

Due to the diversity of the acquired complementors, Salesforce faced both technical and business challenges in integrating the acquisitions into its existing solutions and offerings. Salesforce adopted a flexible approach to the integration of acquired complementors because their diversity meant it wasn't possible to apply a uniform integration strategy.

Technical Aspects. From a technical perspective, one major factor was whether the acquired solution was built on Salesforce's technology or on an external technology stack (or a mix of both). For example, because Vlocity was built natively on the Force.com platform and had been an active participant in the Salesforce ecosystem since its foundation, several technical experts reported a very smooth integration process:

> *"I think the process of integrating acquisitions into Salesforce is very, very streamlined and there is a great respect and a great communication. ... We had three integration task forces to carry it out and to manage all the tensions and to ensure that when we joined the company ... this tension would be worked around or we had a process to carry out that stuff. So, I think since we joined two or three months ago, I don't say we had zero problems, but I can say it's very smooth, very collaborative and we always find a solution. Very often in the interest of the client, there's always a good question to ask: What can we do in the interest of the clients? We try hard to find the answer."* Chief Technology Officer of an acquired complementor

Though the technical integration of Vlocity was accomplished in a very short time, the integration of other acquisitions was very challenging. In some cases, it did not even make sense for Salesforce to fully integrate an acquisition. For example, the full technical integration of Demandware, which was created on external technology, would not have been practical because of the high transaction volumes in consumer-focused e-commerce. Moreover, full integration would likely not have yielded greater benefits.

To provide the flexibility needed to integrate different types of complementors, Salesforce decided to extend its core digital infrastructure to include external providers such as Microsoft's Azure services or Amazon Web Services. As a consequence, several of Salesforce's key acquisitions (e.g., Heroku, MuleSoft, ExactTarget) now run on external infrastructures.

Business Aspects. There were also business challenges in integrating acquired complementors, specifically in the areas of branding and licensing. To address these challenges, Salesforce significantly adjusted the integration process according to the type of acquired complementor.

Some of the acquired complementors are now deeply integrated with Salesforce and the original brands are no longer used (e.g., Demandware, ExactTarget and several acquisitions that were used as a foundation to build Einstein). Sometimes, however, the original brands are still used and are even available outside of Salesforce as a standalone solution (e.g., Tableau, MuleSoft). In other cases, Salesforce applied a hybrid branding strategy. For example, the Evergage personalization solution was initially offered as an alternative to an existing Salesforce proprietary offering (Interaction Studio). Later, Salesforce decided to replace the proprietary solution with Evergage. Several rebrandings took place sometime after the acquisition. For example, the collaboration tool Quip was more deeply integrated into Salesforce's core offerings several years after its acquisition and is now part of the Employees Cloud module. Thus, Salesforce took a flexible approach to branding issues, with decisions made on a case-by-case basis depending on, for instance, the reputation, market share and branding power of the acquired complementor.

To address the licensing challenges arising from acquisitions, Salesforce offers various licensing options. The first is Salesforce Platform licenses, which are designed for clients who do not need access to the functionality of CRM core modules but aim to use Salesforce's development environments to build custom applications. Second, it offers Salesforce licenses, which are designed for clients who require full access to the functionalities of CRM core modules and/or AppExchange applications. Complementors can also sell their own licenses on top of a Salesforce license. However, Salesforce applied different approaches for complementors whose offerings were later integrated into Salesforce's CRM core modules. While the licenses of some acquired complementors were directly integrated into the Salesforce license (e.g., Demandware), others are still offered to clients as an additional license (e.g., Tableau, Vlocity). In the latter case, clients need to buy a Salesforce license as well as a license from the acquired complementor.

Recommendations for Acquiring Platform Complementors

From our analysis of Salesforce's key acquisitions and how the firm addressed the resulting challenges, we have derived four recommendations for acquiring platform

complementors. These recommendations will enable C-level decision makers in platform owners who are following a complementor acquisition strategy to evolve their platform business and ecosystem in beneficial ways. The first two recommendations provide advice on how platform owners should approach acquisitions. The second two provide guidance on addressing the ecosystem-wide challenges relating to clients and acquired complementors.

1. Make Acquisitions in all of the Platform Ecosystem's Strategic Directions of Evolution

Digital platform ecosystems encompass a wide variety of crucial technological and functional capabilities, with multiple possible directions of platform ecosystem evolution. We recommend that, instead of making acquisitions focused on a specific direction of evolution, organizations should consider a portfolio of acquisitions that will enable the platform ecosystem to progress along all the strategic directions of evolution. This is the approach followed by Salesforce. Its acquisitions contributed to all three evolution directions—extending the platform's core technology (e.g., MuleSoft), extending the platform's functional scope (e.g., Demandware) and widening the platform's industry-specific specialization (e.g., Vlocity). For Salesforce, these three directions were strategic because they address the need to grow all groups of ecosystem players—extending the core technology attracted more complementors, extending the functional scope attracted a wider range of clients and widening the industry-specific specialization attracted more industry verticals. Though these evolution directions might look somewhat different for other platform ecosystems, the same principles will apply.

As part of their complementor acquisition strategy, platform owners should therefore, determine the directions that are strategic for their platform ecosystem's evolution. These directions can be derived by considering the stakes and interests of all the ecosystem's players. While some of the strategic directions can be predefined, others will emerge from competition within and between platform ecosystems. At Salesforce, extending the platform's core technology and functional scope were predefined as strategic directions from the outset. However, the third direction (widening the platform's industry-specific specialization) emerged from a group of thriving complementors in the Salesforce ecosystem and led to Salesforce acquiring a leading complementor from this group (Vlocity). Once Vlocity had been integrated into Salesforce's CRM core modules, Salesforce's internal industry teams benefitted enormously from the complementor's expertise, enabling them to better respond to shifting client requirements for industry-specific functionalities.

The experience of Salesforce shows that a shift in complementors' or customers' requirements, or the rapid growth of a complementor in the ecosystem, can be a signal for platform owners to identify a new strategic direction for platform ecosystem evolution.

2. Employ Acquisitions as a Mechanism to Boost Existing or Initiate New Proprietary Developments

Even though the strategic acquisition of complementors will enable rapid evolution of the ecosystem along all directions, the dynamics of the relationships between acquired innovations and proprietary developments is an integral part of the platform ecosystem's sustainable evolution. We recommend that platform owners should first integrate the acquired innovations into their existing offerings and eventually use them as the basis for new proprietary developments. Doing this will ensure the platform owner fully controls the acquired technological innovations and functional competencies.

Depending on the maturity stage of a functional area, platform owners should either leverage acquisitions to boost existing proprietary developments or initiate new ones. On the one hand, by acquiring a leading complementor in a certain area, platform owners can significantly extend their own offerings in the respective area by integrating the complementor's technology and functionalities. For example, in the field of online marketing, Salesforce not only employed key acquisitions to extend a CRM core module (the acquisition of ExactTarget to extend Marketing Cloud), but also to boost some of the same core module's features (e.g., the acquisition of Evergage to boost Interaction Studio).

On the other hand, the acquisition of a thriving complementor can enable platform owners to develop new functional areas and thus provide a more integrated offering to customers. For example, by acquiring MuleSoft, Salesforce was able to create Integration Cloud as a new core module. Salesforce also embedded acquisitions into the creation of cross-module capabilities (e.g., several small acquisitions to build the Einstein AI capability).

Thus, by boosting existing or initiating new proprietary developments, acquisitions can act as a mechanism for implementing major advancements in each of the platform ecosystem's strategic directions of evolution.

3. Prevent Diverse Acquisitions from Destroying the Coherency and Consistency of the Platform's Offerings

A fast-paced environment with multiple, diverse acquisitions made by the platform owner can be challenging from the customer's perspective. Customers need to constantly be able to understand the platform's core modules so they can know which capability can be found in which module or feature. However, if acquisitions and existing proprietary developments provide overlapping functionalities, it often becomes difficult for customers to distinguish between the different offerings. Therefore, a platform owner needs to ensure the coherency and consistency of the platform's offerings to customers. We recommend that platform owners should develop a comprehensive and exhaustive picture of all platform's offerings and establish processes to continuously attain and retain the coherency of the platform's offerings to clients.

In particular, platform owners should present their offerings in a comprehensive overview that enables customers to access all solutions from a central point, and continuously integrate newly acquired innovations into this overview. This approach will not only help to improve convenience for customers, but will also create the feeling of a one-stop shop, even if there are different technologies behind the offerings. For example, Salesforce launched the Customer 360 overview, which incorporates all of its diverse modules and features, and continuously integrates new acquisitions into Customer 360. This approach is not entirely new and has also been followed by some of Salesforce's competitors (e.g., SAP, Microsoft, Oracle). However, Customer 360 is supported by data managers who match, reconcile and update customer data across the various core modules, and by an integration platform (MuleSoft) that enables Salesforce clients to connect the remaining information silos in their enterprise.

In addition to developing and maintaining a comprehensive view on the platform's offerings, we recommend that platform owners launch programs that enable both customers and complementors to have a full understanding of the offerings. To continuously inform its clients about new features and the product roadmap, Salesforce runs a major annual conference (known as Dreamforce, which is now the world's largest software conference). In addition, self-information tools, such as Salesforce's online learning platform (Trailhead), can support clients in learning new features.

Platform owners should also incentivize complementors to significantly increase the support they provide to customers. For example, Salesforce launched several complementor programs with a particular focus on upcoming functionalities to enable complementors to support Salesforce (as the platform owner) in handling clients' potential difficulties.

4. Adopt a Flexible Approach to Integrating Acquired Complementors to Exploit their Individual Potential

Acquired complementors are distinct organizational and technological entities and their diversity generally enables platform ecosystem evolution in different strategic directions. However, because complementors each have their own particularities, to exploit the potential of each acquisition, a platform owner should adopt a flexible approach to integration that handles each integration on a case-by-case basis. We therefore recommend that platform owners should consider the particularities of each acquisition and adopt an integration strategy that is consistent with both the technical and business environments of the acquired complementor.

When defining an appropriate integration strategy that takes account of the technical environment, platform owners should anticipate that the different technology stacks of acquired

complementors will result in significant differences in the speed of integration. In the Salesforce case, acquired complementors whose offerings were natively built for the Salesforce ecosystem were integrated in a noticeably fast process (e.g., Vlocity), whereas other complementors' offerings that ran on external infrastructure (e.g., ExactTarget) could not be integrated into the Salesforce core infrastructure. In the latter case, full integration would not have generated major benefits. Instead, Salesforce extended its core infrastructure with additional infrastructure from external providers (e.g., Microsoft's Azure). Opting for this flexible approach to integration also mobilized new resources in the ecosystem and incentivized some complementors to offer innovative solutions to overcome the underlying technical challenges of integration. One example is MuleSoft, which built an API platform that enables the integration of acquired technologies into the Salesforce platform's core technology.

When considering the integration approach from a business environment perspective, a platform owner should differentiate the use case and business model of the acquired complementor. In particular, we recommend that platform owners should opt for a flexible integration strategy with regard to branding and licensing. In the Salesforce case, three different strategies for branding of acquired complementors were applied, depending on the level of integration, overlap with existing offerings and branding power of the acquired complementor. With some acquisitions, the old brand was immediately dropped because the acquired complementor was strongly integrated into Salesforce's existing offerings (e.g., Demandware, ExactTarget and several acquisitions to build Einstein). With other acquisitions, the acquired brand was offered as an alternative to an existing proprietary development (e.g., Evergage and Interaction Studio) before the acquired offering replaced the proprietary development. And in some cases, Salesforce retained the acquired brand name because it was widely known (e.g., Tableau, MuleSoft) to take advantage of the complementor's market position in terms of platform reach.

The multiple strategy approach to integration also applies to licensing considerations. Salesforce generally sells a basic platform license with limited functionality, which allows other providers to build their offerings on the platform and sell their own license as an add-on. For some of the acquired complementors that were integrated into Salesforce's core modules (e.g., Demandware, Vlocity), clients do not need to buy an additional license, while for others there is a requirement to buy a second license (e.g., Tableau).

Recommendation Caveats

Our four recommendations were derived in the context of an enterprise software ecosystem and may need to be revisited when applied to other platform contexts. Maintaining the coherency and consistency of platform offerings was a key challenge in the Salesforce ecosystem, where the platform owner aimed to provide its clients with a one-stop shop for enterprise software. This challenge might not be so prominent for platform owners in other settings. In more consumer-focused platform ecosystems (Apple's iOS, for example), customers may not necessarily require consolidation and consistency of the platform's offerings because, unlike enterprise software, they can be used more independently.

Moreover, our analysis of Salesforce's acquisitions identified motivations for making acquisitions that were specific to enterprise software offerings. The motivations of platform owners in other contexts may well be different. For example, platform owners sometimes buy a competitor to acquire a similar platform operating in the same market niche.[13] Such "killer acquisitions"[14] mainly occur in the context of transaction-oriented platforms, and are less prevalent in enterprise software ecosystems, which are dominated by giant competitors such as SAP.

We also acknowledge that our investigation focused on Salesforce's key acquisitions and only on clients and acquired complementors. Studying all the acquisitions made by Salesforce

13 For more information, see Miric, M., Pagani, M. and El Sawy, O. A., op. cit., forthcoming.

14 For insights into the phenomenon of killer acquisitions, see Cunningham, C., Ederer, F. and Ma, S. "Killer Acquisitions," *Journal of Political Economy* (129:3), March 2021, pp. 649-702.

may have provided additional insights. Similarly, examining the implications for other ecosystem complementors not acquired by Salesforce may have revealed additional challenges and potential benefits. Such complementors may perceive an acquisition as the platform owner entering into competition with them to appropriate a share of their revenue,[15] especially if the acquired complementor competes in the same market niche.

Finally, while we are confident that the evolution of the Salesforce platform ecosystem was significantly influenced by the plethora of acquisitions, we acknowledge that there are other ways to extend a platform's technology and functionalities (e.g., partnerships with leading complementors or with other platform owners), which were not the focus of our study.

Concluding Comments

Digital platform markets are characterized by fierce competition, and a key differentiator of a platform over its competitors is the ability to evolve the ecosystem quickly along all the evolution directions. Relying on new proprietary developments only to drive this evolution is unlikely to be feasible because they take time and require a wide range of competencies that platform owners may not possess. However, complementary innovations to improve a platform's technology and functionalities may already exist in the market. Platform owners should therefore look to acquire complementors so they can incorporate and own these existing competencies and thus enable rapid growth and a richer functionality in their platform offerings. But adopting a complementor acquisition strategy means facing various challenges in leveraging acquisitions to enable major advancements in the platform ecosystem's strategic directions of evolution.

In this article, we have analyzed a platform owner's (Salesforce) acquisitions of complementors in an enterprise software ecosystem. Based on insights from this analysis, we have provided recommendations on how platform owners should acquire complementors to develop their platforms' technology and core offerings and evolve their ecosystems.

Complementors to digital platforms can also benefit from our recommendations. A better understanding of how platform owners conduct acquisitions supports complementors' strategic positioning and competitive moves in platform ecosystems. This specifically applies to complementors that seek to make their offerings strategically attractive to platform owners, and thus become potential targets for an acquisition competition among platform owners.

Appendix A: Research Method

Data Collection

This article is based on an exploratory study of the key acquisitions made by Salesforce. We collected data from July 2020 until January 2021 through 19 semistructured interviews with experts from the Salesforce ecosystem, with an average duration of 63 minutes for each interview. The interview questions were built around the roles, interests, concerns and competencies of each group of ecosystem players (platform owner, complementors and clients). To start with, our aim was to focus on the evolution of the Salesforce ecosystem and to explore the contributions and perspectives of the different players in this evolution.

Specifically, we set out to collect data on the following:

1. Each player's understanding of the ecosystem (e.g., the core and additional offerings)
2. Each player's role in the ecosystem and in relation to the other players
3. The major developments in the ecosystem that considerably impacted the roles of players and the values they derive from the ecosystem
4. The major changes that considerably impacted the evolution of the ecosystem.

During each interview, we also collected data about the temporal sequence of the major changes in the ecosystem so we could later investigate their interrelationships and impacts on one another.

Because all the initial interviews mentioned acquisitions as a major influencing factor on platform ecosystem evolution, we decided to

15 For an overview of studies on platform owner's market entry, see Zhu, F. "Friends or Foes? Examining Platform Owner'' Entry into Complementors' Spaces," *Journal of Economics & Management Strategy* (28:10), December 2018, pp. 23-28.

Interviewee Profiles

Ecosystem Players	Interviewee Position/Unit/Experience[16]
Platform Owner	**Salesforce** • Program Architect Director/Customer Success Group/20; 5 • Senior Director, Product Management/Community Cloud/16; 5 • Vice President, Product Management/Developer Platform/19; 10 • Senior Director, Solution Engineering/Solution Consulting/30; 12 • Business Architect Director/Customer Service Group/32; 5 • Senior Executive, Global Professional Services/Customer Success Group/29; 12 • Program Architect Director/Customer Service Group/20; 6 • Senior Executive, AppExchange & ISV Enablement/AppExchange/19; 16 • Master Enterprise Architect/Customer Success Group/22; 7
Complementors	**Complementor 1 (Developer):**[17] U.S.-based provider of an end-to-end DevOps solution with more than 100 employees and offices in North America and Europe. • Chief Technology Officer/Product Development/19; 7
	Complementor 2 (Developer): U.S.-based provider of industry-specific cloud and mobile software with more than 500 employees and offices in North America, Europe, Asia and Latin America. • Chief Digital Transformation Officer/Customer Success/25; 2
	Complementor 3 (Developer): U.S.-based provider of integration software for applications, data and devices with more than 2,000 employees and offices in North America, Europe and Latin America. • Senior Customer Success Architect/Customer Success/23; 10
	Complementor 4 (Implementation Consultant): Spain-based provider of Salesforce consultancy services with more than 120 employees and offices in two countries. • Chief Executive Officer/1; 12
	Complementor 5 (Implementation Consultant): Ireland-based international provider of consultancy services with more than 500,000 employees. • Head Enterprise Architecture/13; 5 • Head Cloud First Go-To-Market Group/28; 2
	Complementor 6 (Developer): U.S.-based provider of customized software tailored for higher education and non-profit clients with more than 50 employees. • Chief Executive Officer/23; 9 (*CO-6*)
Clients	**Client 1:** Germany-based producer of building materials and construction systems with more than 35,000 employees and offices in more than 85 countries. • Senior Manager, Sales Excellence/Group Marketing/6; 6
	Client 2: Ireland-based industrial gases and engineering firm with almost 80,000 employees in more than 100 countries. • Director, Applications/IT/2; 15
	Client 3: Kenya-based non-profit organization that has developed several funding programs to support education and to fight famine. • Founder & Sponsor Development/30; 8

focus the remaining interviews on this topic. Some acquisitions were repeatedly mentioned by several interviewees from different player groups (Salesforce, complementors and clients), so we decided to focus on these key acquisitions, which are all closely related to Salesforce's CRM core modules and capabilities.

16 Years of professional experience; years of experience in current firm.

17 Complementor and customer organizations wish to remain anonymous.

To ensure that we obtained a comprehensive view of the different perspectives of the ecosystem, we identified interviewees from all three player groups: the platform owner (Salesforce), complementors (e.g., software developers, implementation consultancy service providers) and Salesforce clients. Interviewee selection criteria were to include both business and technology roles and people with an in-depth familiarity with Salesforce and its ecosystem. This latter criterion was met by engaging an internal expert from Salesforce as a member of the research team and as a co-author of this article. The table below provides an overview of the interviewees and their organizations.

To ensure consistency of data collection, we developed comprehensive interview guidelines, which were customized according to the interviewee's organization's role in the Salesforce ecosystem (owner, complementor or client). For interviews with Salesforce employees, we also adapted the guidelines according to their functional area. The majority of interviews were conducted by two researchers (the co-author from Salesforce was not involved in the interviews). With one exception, the interviews were recorded and later transcribed (during one interview we took notes).

After each interview, the researchers involved immediately reflected on and documented the major insights that they had gained. In addition, after every few interviews, the whole research team met to discuss what new directions had emerged that had not been previously considered. The results of these discussions were documented in the form of notes and visualizations. These sessions stimulated the concurrent collection of data and analysis. We also gathered secondary data including publicly available documents (e.g., business reports, news articles). This secondary data helped us to identify the temporal sequence and details of the major changes in Salesforce's platform ecosystem.

Data Analysis

The interview transcripts were used as the basis for data analysis. We employed process theory[18] to analyze the longitudinal platform ecosystem evolution at Salesforce. Process studies analyze three main components—antecedents, events and outcomes. Antecedents, which trigger an event, consist of external contextual factors (e.g., the technological and business environments) and internal contextual factors (e.g., mechanisms imposed by the platform owner); outcomes are the results of each event. As such, a process represents a sequence of collective events unfolding over time to give meaning to a phenomenon's status quo. In the context of our research, each event corresponded to a major change in Salesforce's platform ecosystem (e.g., a key acquisition or proprietary development) that can be considered as a turning point in the way the ecosystem evolved and emerged over time.

After coding the main events and their corresponding antecedents and outcomes, we coded the relation between events with respect to, for instance, the engaged platform ecosystem players for the respective event. This approach enabled us to classify these major events according to their influence on the platform and the ecosystem. For example, we initially identified several different outcomes of events from a technical perspective (e.g., improved technology, higher integration capabilities, new programming language). We then analyzed the outcomes from the perspectives of the involved complementors (e.g., better enablement services, new business plan assessment, lower transaction fees) and clients (e.g., new features, improved documentation, improved client community). Finally, we categorized the codes into higher-level metacodes as part of an exploratory process of step-by-step coding of the data to derive major insights.[19]

18 Similar to our research objective, process theory is frequently employed to examine how organizational phenomena evolve over time. For more information, see Pettigrew, A. M. "What Is a Processual Analysis?," *Scandinavian Journal of Management* (13:4), December 1997, pp. 337-348.

19 To categorize the codes, we followed the suggestions of Eisenhardt, K. M. "Building Theories from Case-Study Research," *Academy of Management Review* (14:4), October 1989, pp. 532-550.

Appendix B: Relationship of our Study to Other Research on Platform Ecosystems

Our investigation of Salesforce's key acquisitions also contributes to the intersection of two emerging research streams, namely acquisitions in digital markets (i.e., software acquisitions) and platform ecosystem evolution. A considerable number of studies focus on, for instance, why companies acquire firms in digital markets[20] but only a limited number focus on acquisition-induced platform ecosystem evolution and dynamics.[21] The few notable exceptions provide important insights. For example, in the context of transaction-oriented digital platforms, some scholars have studied the acquisition patterns of digital platform companies and compared them with those of non-platform companies.[22] They found that platform companies often first acquire competing platform companies from the same market niche (e.g., a housing portal acquires other smaller housing portals). As platforms mature, they begin to acquire non-platform companies from other market niches.

Another study suggests that acquisitions can be employed by platform owners to activate, alter or adjust the ties between their ecosystems' players, helping platform owners sustain a competitive advantage.[23] Another contribution is a study of Cisco's platform ecosystem, which provides important insights on how a platform owner can create value through continuously integrating acquisitions into the platform's core technology.[24]

Our study complements these studies by providing recommendations to platform owners on how to employ acquisitions to drive the platform ecosystem's evolution. In addition, by taking a multiplayer approach (from the perspectives of the platform owner, complementors and customers), we provide recommendations on how to deal with the impacts of acquisitions on the ecosystem's internal dynamics.

20 For more information, see Miric, M., Pagani, M., and El Sawy, O. A., op. cit., forthcoming.

21 For more details about potential avenues for prospective research on platform ecosystem evolution, see Rietveld, J. and Schilling, M. A. "Platform Competition: A Systematic and Interdisciplinary Review of the Literature," *Journal of Management* (47:6), June 2021, pp. 1528-1563.

22 For more information, see Miric, M., Pagani, M., and El Sawy, O. A., op. cit., forthcoming.

23 For more information, see Koch, T. and Windsperger, J. "Seeing through the Network: Competitive Advantage in the Digital Economy," *Journal of Organization Design* (6:1), May 2017, pp. 1-30.

24 For more information, see Toppenberg, G., Henningsson, S. and Eaton, B., op. cit., 2016.

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