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Open innovation's "multiunit back-end problem": How corporations can overcome business unit rivalry

Summary

In this article, we conceptualized the "multiunit back-end problem" of open innovation based on our case study of the BPCE Group, a large French bank with two business units: Banque Populaire (BP) and Caisse d'Epargne (CE). The "multiunit back-end problem" occurs when internal business units who consider themselves rivals are asked to collaborate for the success of an open innovation initiative. BPCE failed several times to use external start-ups to accelerate its digital transformation due to rivalry between its internal business units. We demonstrate how the "multiunit back-end problem" of open innovation can jeopardize corporations' open innovation initiatives with start-ups. We also present guidelines firms with rival business units can use to align their front-end and back-end when working with start-ups to accelerate their digital transformation program.

Keywords: multiunit back-end problem; rivalry between units, competitive advantage, back-end and front-end of open innovation, digital innovation, open innovation, start-up program, multiunit organization; internal coopetition

Engagement with start-ups is one form of open innovation (OI) used to accelerate a corporation's innovation process at lower cost and less risk.¹ Yet, engagements with start-ups do not always deliver this expected acceleration²—corporations may not observe any progress in innovation even after having engaged with start-ups for several years. Sometimes companies shut down their main start-up initiatives due to lack of results. For example, Samsung took this extreme decision for its Israeli accelerator in 2019, and Coca-Cola halted its start-up accelerator "Founders" in 2016.

One reason for the lack of results might be the singular focus on the front-end of open innovation—that is, *connecting the corporation to relevant start-ups*. However, a second and less discussed problem may arise on the back-end of open-innovation³—namely, *corporations may neglect their own internal Valley of Death*, which is all the internal struggles that can thwart the successful transfer of a start-up technology, identified by the front-end of the innovation process, to a business unit. In such instances, no matter how much money is invested in the initiative or how good the identified start-ups are, there will be no progress in innovation because the business unit either refuses to use the technology or will not take it to market.

To accelerate their innovation by engaging with start-ups, corporations must establish strong connections between the start-up (the front-end) and their internal business units (the back-end). This dual focus—both externally and internally—is fundamental to effective corporate engagement with start-ups and to accelerating the innovation. In other words, it is not just about having the idea of the innovation or developing it, it's also about down-streaming it to the business unit.⁴

This required focus on the back-end raises an important question: at the back-end of open innovation, what can impede a corporation's ability to accelerate its innovation with start-ups,

and how can it overcome those impediments? While the question is not new, our exploration of this problem in the context of the digital transformation of the banking industry allowed us to identify an unrecognized back-end problem in a corporation's engagement with start-ups. We call this "multiunit back-end problem" of open innovation, which is the problem of *connecting and engaging not just any internal business unit with start-ups but rather multiple rival internal business units to a corporation's open-innovation initiative with start-ups*. The rivalry between business units can impede the whole open innovation initiative with start-ups and thus requires careful and specific management. The article contributes to the existing literature by describing and providing empirical illustrations of this important managerial problem and by offering a framework with managerial solutions to mitigate this problem.

Background

The banking industry's digital transformation efforts illustrate barriers to open innovation success, including "the multiunit back-end problem." Successful digital transformation is critical for all firms. Collaborating with start-ups is one approach used by traditional banks to accelerate their critical digital transformation. Digital transformation initiatives with start-ups may fail for many reasons, one of which is internal business units' failure to collaborate—a problem we believe requires more scrutiny by practitioners and academics.

Digital transformation in the banking industry

Using digital technology to improve an existing business, including the products and services it offers, is a common innovation trend in all industries. For the last 50 years, traditional banks have used digital technologies to develop new or more efficient products and services and to support fraud detection and manage risks.

Digital innovations alone cannot ensure traditional banks competitive advantage⁵ or survival. Traditional banks face pressure by nimble financial technology start-up companies (“Fintech”) and powerful Big Techs (such as Amazon, Alibaba, Facebook) that attract their current and potential customers through digital innovations in products and services.⁶ Fintech and Big Tech have two competitive advantages over traditional banks. First, they do not face the same degree of regulatory pressure in terms of licenses, capital, and/or rules to identify customers and monitor and report transactions. Second, they do not simply offer one or two promising incremental digital innovations in financial products or services that traditional banks need to catch up on—they offer a continuously growing number of disruptive digital innovations⁷ such as new currencies like Bitcoin and other blockchain-enabled approaches; new channels like delivering most banking functions on one’s smartphone; and new services like instantaneous mortgage decisions or cybersecurity protection). Moreover, the list of digital technologies supporting these competitors’ disruptive digital innovations is broad: it ranges from well-known technologies such as web 2.0, smart mobile devices and high-speed internet, to emerging technologies such as the Internet of Things (IoT), big data, 3D printing, cloud, AI, machine learning, extended reality, quantum calculation, etc.⁸

In response, most traditional banks engage in digital transformation, and they aim to transform into a top performer of the digital economy—that is, holistically digital and customer-facing organizations that leverage their high volume of data and digitize their operating processes.⁹ Traditional banks have huge anticipated outcomes from digital transformation: the ability to offer differentiated products and services that generate significant income, achieve lower operational costs, shorter transaction time, instant managerial information, faster intra-organization connection, and easier interaction with current and future customers.

Successful digital transformation requires both monetization of their digital innovations and radical behavioral change by customers, business units, and employees which banks consistently underestimate or underinvest in.¹⁰ More broadly, digital transformation requires that banks (re)define their organization's value proposition in all aspects of their business by continuously assessing four questions: Why is digitalization important? Where should they direct their digitalization efforts? What enablers and competencies are needed? How can the operating model, with organizational and managerial processes, achieve successful digital transformation?¹¹

Corporate–start-up engagement for digital transformation

To answer the four questions about how to achieve successful digital transformation, traditional banks such as Wells Fargo, Barclays, Goldman Sachs, BBVA, and Santander realized that they needed to give external partners such as start-ups a more active role in their innovation process.¹² Traditional banks lack the capabilities in digital technologies and effective mechanisms to deliver internal digital innovations at a faster speed or lower cost than Fintech and Big Tech. Moreover, start-ups are not limited by large companies' myopia and inertia¹³, and they have the flexibility, alertness, creativity, and willingness to take risks that traditional banks only dream of.¹⁴ Finally, they are not constrained by the traditional banks' regulatory and compliance pressures (transparency, privacy, product liability). These capabilities make start-ups powerful engines for accelerating the digital transformation of traditional banks but also traditional corporations in general¹⁵.

However, as large companies are not large versions of start-ups, traditional banks do not freely and effortlessly absorb knowledge outside their boundaries. Comparing to a startup, a large, established company has already found and scaled its business model and often seeks opportunities that fit with that model and shuns opportunities that might disrupt its current

business model.¹⁶ Even if recent reports from Ernst & Young,¹⁷ PricewaterhouseCoopers,¹⁸ and McKinsey & Company¹⁹ highlight that engaging with start-ups to develop digital innovations is necessary for all the aforementioned reasons, previous literature shows that not all corporations benefit equally from open innovation practices with start-ups. Whatever the industry, intra-organizational factors—such as internal investments in R&D, routines, technological overlap, and trust or cultural compatibility between the corporation and the partner—directly affect a corporation's ability to identify, assimilate, transform, and apply valuable external knowledge.²⁰

While corporations must implement organizational and managerial processes to take into account these intra-organizational factors and ensure the success of corporate initiatives with start-ups, they also need some digital transformation-specific organizational and managerial processes that take into account working with data, organizing for digitalization, and achieving better cooperation among different functions.²¹ In 2016, the Deloitte Center for Financial Services published a list of required organizational and managerial processes to succeed the digital transformation with start-ups: (1) A corporation (here banks) must rethink its excessively long decision-making processes or even contractual heaviness to give start-ups access to the corporation's data; (2) A corporation must rewire its business, operating, and customer models to be digital, so it can collect the huge volume of data the start-up needs to build an efficient solution; and (3) A corporation must overcome the closed innovation mindset of the business units and get them to use the technology of external start-ups and co-create solutions by openly sharing their data and digital needs.²² Finally, corporations need to progress cautiously with start-ups to ensure that together they respect regulatory and compliance pressure.

Business units' roles in corporate–start-up engagement for digital transformation

In a digital transformation program, the corporate accelerator intermediary's role is well-known—namely, making the asymmetric partnerships between the large corporation and the small start-ups work.²³ It requires corporate accelerators to customize how they engage with start-ups based on their strategic or financial intention (e.g., corporate venture capital, corporate incubators, corporate accelerator program, hackathons, platform programs, co-working spaces, co-development agreement, and acquisition) and, more importantly, to establish strong engagement between the corporation's internal business units and the promising start-ups identified.²⁴

Previous literature, however, often overlooks the business units' role. Business units don't automatically engage in an open innovation initiative for several reasons²⁵. A business unit may be asked to use a start-up technology that may not respond to its needs or is unproven. A start-up technology may even cannibalize one of the business unit's digital innovations currently under development. Sometimes the same business units are also asked to be involved in the whole front-end of open innovation, which includes the following: attract the start-up, evaluate the start-up's potential, help the start-up build a minimum viable product (a new product with basic but sufficient features to attract consumers' attention); and scale it by implementing the new technology. The business unit considers these tasks an additional burden because they need to be done concurrently with the business unit's daily activities, and sometimes these tasks are disconnected from what the business unit wants to do.

While academics do study the problem of connecting and engaging business units with a corporation's open innovation initiative—that is, the “back-end of open innovation”—managerial solutions to overcome it are still needed.²⁶ Within the broader context of the “back-end of open-innovation,” we explore one specific problem—“the multiunit back-end

problem”—that emerged from our empirical observation in the banking industry. The “multiunit back-end problem” is the set of problems that arise when a corporation asks internal business units that consider each other rivals to collaborate for the success of the open innovation initiative.

Since the business units belong to the same corporation, it seems logical for them to share knowledge for a joint project that can benefit the corporation overall. However, the rivalry between business units causes them not to share their digital vision, pool their initiatives, or adapt their organizations to common digital projects. This internal rivalry or frictions²⁷ creates ambiguous relations when a corporation encourages or forces its business units to cooperate,²⁸ especially regarding knowledge sharing²⁹, because one business unit may worry that a rival unit will use the shared knowledge to attempt to outperform them. If the business units do not share knowledge, the entire joint project may be in jeopardy.³⁰ In the banking sector, business units are the most important partners to cooperate in innovation³¹ because they are the principal sources of knowledge and data³² ranging from financial data to customers' data.

In the banking industry, the business units are usually different bank brands that operate and innovate in silos³³ for several internal reasons: difficulties in balancing cooperation for innovation with daily tasks; problems communicating with partners; problems with division of contributions and outcomes from cooperation; partners not meeting expectations and deadlines; maintaining internal commitment towards cooperation; development of dependency on external partners; and secrecy concerns.³⁴ All these reasons appear amplified if the traditional business units consider each other rivals.

Rival business units can share knowledge and cooperate, but, corporations need be aware of their paradoxical relationship and adapt a careful and specific management to simultaneously

leverage business unit cooperation and competition (also called “internal cooperation” or “intra-firm cooperation”).³⁵ For instance, the multiunit Samsung uses parallel development to enable its business units to cooperate and compete simultaneously.³⁶ The multiunit Ubisoft uses a principle of lagging that enables rival business units to collaborate and share their best practices.³⁷

Our case study highlights how the business units' rivalry is a back-end problem of open innovation that contributes to corporations' failures to getting results from their open innovation initiatives with start-ups.

BPCE Group's digital transformation and the open innovation “multiunit back-end problem”

We illustrate empirically the “multiunit back-end problem” the BPCE Group (also called BPCE) faced when using external start-ups for its digital transformation. BPCE Group is France's second-largest banking group with a 20 percent market share, 24 billion euros in banking income, 30 million customers, 35 local banks, and 110,000 employees. It is considered one of the 30 systemic banks “too big to fail.”

On January 28, 2019, the D-Rating agency, which monitors companies' digital performance using three criteria—the level of customers' use of digital channels, the performance of the digital product and service offerings, and the digital transformation process itself—moved the BPCE Group from its “digital followers” list to its “digital transformer” list. According to Didier Farjon, CEO of D-Rating, the promotion of the BPCE Group as a digital transformer in 2019 was mainly due to its “transformation process, notably in terms of attracting new talent and the use of new technologies.” Nearly 75 percent of BPCE's active customers use one of

the two brands' digital channels. Moreover, BPCE implemented a large range of digital innovations they co-developed with external start-ups, including customized credit scoring, improved fraud detection, faster evaluation of attrition-risk scores to predict a consumer's behavior, back-office automation, automation of credit decisions, and 24/7 availability via an interactive voice response. These digital innovations allowed BPCE to customize offers, accelerate processes, reduce costs, and prepare their BP and CE's local banks for the transition to large-scale use of AI tools. All these advancements made BPCE a digital transformer.

The journey to "digital transformer" was rife with struggles and failures. For three years, BPCE failed to make the D-Rating "digital transformer" ranking list. Harsh internal criticisms suggesting that BPCE's initiative to engage with start-ups was an "empty shell" were leaked publicly. None of the start-ups BPCE bought managed to scale their digital innovations within BP and CE's local banks. Even worse, BPCE lost 148 million euros in 2019³⁸ with the buyout of Fidor, one of the most promising digital start-ups ("digital bank") that achieved no results.

The lack of results surprised BPCE because it had what lots of corporations dreamed of for its digital transformation: CEO involvement; local banks aware of the need to offer more innovative digital services to their customers; a growing and promising ecosystem of start-ups from which it bought out some of the most promising digital start-ups such as Fidor, Pot Commun, and PayPlug; and the creation of a task force called 89C3³⁹ supported by a huge budget of 600 million euros for three years to ensure the development and use of relevant digital innovation coming from start-ups.

To develop this case, on a first exploratory phase, we collected both primary and secondary data to identify how the knowledge was expected to flow between the front-end of OI (i.e., start-ups engaged with BPCE) and the back-end of OI (i.e., the rival business units), and

finally, what struggles impeded these flows. The rivalry between the business units (here the local banks) emerged from the data as one of the key drivers in BPCE's failure to accelerate its digital transformation using start-ups. This driver, we postulated, has been overlooked by open innovation practitioners and academics. Thus, we started our second round of analysis, which focused on confirming that the business units (i.e., the local banks) competed and cooperated simultaneously in OI initiatives with start-ups. Upon understanding the effect of these rivalries on the corporate–start-up initiative, we assessed the managerial impacts and developed solutions (see Appendix 1 for more details on our method).

BPCE's two rival business units: BP and CE

In 2009, after suffering significant losses during the financial crisis, the French government required Banque Populaire (BP) and Caisse d'Épargne (CE) to merge to become BPCE Group. BPCE defines the entire group's strategy, ensures the financial solidarity of regional banks, manages liquidity and risk, and guides the human resources policy. BPCE opted to keep the two distinctive BP and CE brands; most customers don't realize the two brands belong to the same group. At the operational level, BP and CE work in silos; each one is an independent business unit that maintains many aspects of autonomy. For instance, each division controls most of its own IT budget. Moreover, the market competition between these banks that started in 1984 (with a new financial law in France) remains even though BP and CE now belong to the same company. BP's 14 local banks and CE's 15 local banks offer similar products in the same geographical areas; 67 percent of their products are in direct competition. Moreover, BP and CE's respective local banks feel that the merger increased the competition not only on the market, but internally for headquarter support and budget (see Table 1 for details on the empirical manifestation of the internal rivalry between business units—namely, the local banks BP and CE).

Table 1. BP and CE's internal rivalry

Quotes	Internal Rivalry
<p>Quote 1: Fight for customers</p> <p>“Some customers come to see us with a mortgage offer to buy a house from BP, and if we want to get the customer we have to do an offer lower than them, in response BP can decide to lower again its rate. It’s a vicious circle.” — CE Manager interview</p>	Market overlap
<p>Quote 2: Fight for internal survival</p> <p>“You do not want to be performing lower than the CE bank that is across the street from your agency. If they decide to keep only one, you are going to disappear: I do not know what is worst being shut down or merged with CE.” — BP Manager interview</p>	Limited internal resources and internal ranking
<p>Quote 3: Fight for startups</p> <p>“I am super proud; we convinced the startup [X] to engage with Néo Business. It was a real race, we knew that Next Innov had also eyes on it.” — CE Manager interview</p>	Start-up program overlap

Internal business units' rivalry hinders engagement with start-ups

This rivalry between local banks impeded BPCE's ability overall to co-develop and use digital products and services from external start-ups. The rivalry results in their failure to agree on three critical conditions essential to the success of BPCE's digital transformation program with external start-ups: (1) sharing raw data; (2) revealing digital needs; and (3) co-building digital innovation with the start-ups.

Internal rivalry impedes raw-data sharing

In 2017, BPCE created 89C3, an internal digital innovation task force to drive the digital transformation and engagement with external digital start-ups. BPCE hired an experienced chief digital officer, Yves Tyrode, to build and manage the task force. Tyrode considered creating a data lake the critical first step to a successful digital transformation and necessary

to attract external start-ups. A data lake is a storage repository that holds a vast amount of the local banks' raw data derived from banking transactions, channel usage, and other customer behaviors. The efficacy of most of the start-ups' digital innovations depended on the volume and quality of data. Without a data lake, start-ups could not apply their technology, and local banks could not see the value in a start-up's digital innovation. Moreover, the bigger the data lake is the more attractive BPCE can be to external start-ups choosing one partner from multiple big corporations.

For two years the 89C3 task force failed to create a data lake due largely to the business units' internal rivalry. In one recorded meetup, an 89C3 IT manager said, "Neither BP nor CE was trusting the initiative and refused to give access to their raw data for the data lake." BP and CE considered the protection of their raw data essential to their survival. Their reasoning was that sharing raw data about their customers, pricing, and market share would hurt the respective local bank's competitive advantage. Knowing the identities of the best customers would enable targeting with aggressive commercial offers, price alignments, etc. Another 89C3 IT manager explained, "Everyone does not necessarily agree with the idea that another local bank will use these data." To BP and CE, the idea of allowing data to flow across the networks of competing brand banks, even though they belonged to the same group, was counterintuitive. Seven years ago, some BP and CE local banks' directors had already determined that "data are the new oil", and started to use AI tools to analyze their data. However, CE and BP AI tools were developed only for internal use and were not shared with the other business unit.⁴⁰

The rivalry between BP and CE hampered the initial sharing of raw data required to create a joint data lake. BP and CE used the pretexts of protecting the confidentiality of their customers and regulations around privacy to stop any discussions about raw-data sharing,

even though a joint data lake could improve the BPCE Group's competitive advantage in the near future.

Internal rivalry thwarts sharing of digital needs

When BPCE purchased promising existing start-ups or 89C3 helped scale the products of external start-ups, BP and CE's local banks hesitated or did not use the digital products or services developed by the start-ups as most of them were irrelevant or secondary to their customers' needs or internal local needs. One BP local bank manager said publicly, "Working in silos is faster and more flexible and more relevant than in joint projects."⁴¹

The digital start-ups' inability to understand traditional bank processes and mindset was usually cited as the reason for these failures, however, the local banks' rivalry was the hidden, yet more serious, reason. BP and CE feared that by sharing with start-ups or even with a centralized actor mandated by BPCE Group such as 89C3, their digital needs would leak to the other local bank and enable them to steal customers. According to one local bank director, "The bank is a competitive job: the client is free to go wherever it wants."⁴² Another local bank director further explained that "banks need to deliver continuously to be the one offering the best service and what some people forget is that digital needs are also our current 'digital weaknesses' and if the other local bank hears it, they will use it to convince our client to leave us". Thus, neither BP nor CE wanted to openly disclose their digital needs, even if they were aware that it could ensure the strategic fit between their needs and the digital solutions offered by the start-ups.

BP and CE's rivalry crippled the initial sharing of digital needs required to select the start-ups and guide the start-ups' development of useful digital innovations. To avoid revealing their digital strategic needs, BP and CE used different tactics. Some banks indicated that they had

no digital needs; others suggested they would love to collaborate, but their short-term operational tasks did not afford them time to spend with the start-ups explaining their needs, especially if they were already involved in their respective local start-ups program. The last group shared only generic needs in AI or machine learning without any specific information.

Internal rivalry impedes co-development of solutions

As BP's director of modernization explained, "Innovation is not exclusively start-up technology". Building a relevant digital innovation from a start-up idea requires that the start-up work closely with one local bank and have access to the non-anonymized data to test the digital innovation. BP and CE refused to collaborate with any acquired digital start-up or start-ups supported by 89C3 due to fears of jeopardizing any digital innovations coming from their own respective start-ups program. The long-term risk, from their perspective, was that BPCE Group's task force would replace their respective start-up initiatives with centralized start-up initiatives. BP and CE used their start-up initiatives strategically to differentiate themselves for their customers and to identify promising start-ups to receive credit from senior management and increase their reputation relative to the other local bank.

Finally, co-developing a solution with start-ups is costly in time and effort. Neither local bank wanted to build a digital innovation with a start-up that the other local bank would receive for free. Each feared the other internal local bank would be a free-rider. But having a local bank mentoring the start-ups is critical to finalize the digital product or service by testing it under real conditions. BP and CE cited lack of time and concerns about having free-riders as their reasons not to commit.

Table 2. BPCE failures to engage with start-ups due to internal business units' rivalry

Manifestation of the internal rivalry	Drivers	Outcome
Neither business unit wants to share its raw data to create a joint data lake	Fear of decreasing their market competitiveness	Jeopardize the ability to attract startups
Neither business unit wants to reveal its digital needs	Fear of decreasing their market competitiveness	Jeopardize the OI initiative to build digital innovation
Neither business unit wants to co-build an innovation with a start-up identified by the Corporate innovation center	Fear of having their own start-up program budget decreased and negatively impacting their internal reputation Fear the other business unit would consider the other a free-rider	Jeopardize the OI initiative to scale the digital innovation Jeopardize the OI initiative to build the digital innovation

BPCE's solution to overcome the "multiunit back-end problem"

Surprisingly, BPCE overcame the "multiunit back-end problem" by accepting the business units' rivalry and leveraging their competition, rather than trying to reduce it. The banking group implemented different processes and initiatives that simultaneously fostered cooperation and competition. This section provides examples of solutions BPCE used to manage its "multiunit back-end problem." The examples are applicable to large corporations in other industries.

Overcoming issues to create a joint data lake

Beginning in 2019, BP and CE overcame their reluctance and built a joint data lake. BPCE's current data lake comprises more than 40,000 different data sets from customer data derived from mandatory data and social media data. These data sets are now available for all start-ups engaged with BPCE or the local banks' respective start-ups programs. BPCE acted in two stages to overcome the local banks' reluctance and create this joint data lake. BPCE did not force the local banks to share all their data because by doing so, it ran the risk of the banks providing only partial or low-quality data. Creating a situation in which the local banks willingly shared the data was key.

First, 89C3 eliminated the fear of sharing raw data for competitive concerns by mandating the creation of a data lake that protects any data shared from leaking to external actors or internal rival local banks. BP and CE agreed to adopt the solution proposed by 89C3 of anonymizing the customers' data, then duplicating and placing the data into an independent database group. 89C3 created a secure process whereby BP and CE, respectively, only accessed the anonymized data—this secure process eliminated fears of raw data leakage to external actors or each other. Yves Tyrode, BPCE's chief digital officer who was also CIO of 89C3, publicly stated, "Our work on the data is not to openly disclose any customer's data, our work is to implement process to be able to be digital while being trusted. That means using the data of client in a way that protects it from any disclosure outside its local bank."

The anonymization of the data as a solution is costly and time-consuming. The BPCE's CEO expressed his concerns: "It is going to be costly, and a very long journey that will require time, money, and work. We need to make sure it is worth it." The second stage consisted of incentivizing the sharing of raw data well above the cost of anonymizing it. BPCE's CEO officially stated his support for creating a data lake and that "any the digital transformation would start by a data lake", and 89C3 created an attractive pool of digital innovations that neither BP nor CE could achieve alone. 89C3 works with more than 500 start-ups, while BP's Next Innov and CE's Néo Business, respectively, have worked with less than 100. When the start-ups create a minimum viable product, 89C3 helps the start-ups build, secure, and scale the digital innovation so it can easily plug into any local bank at no cost. However, to use any of the digital innovations created through 89C3, the local bank must share raw data or past digital innovations developed internally. This requirement incentivizes BP and CE's local banks to share their raw data, even if they know all the other local banks can use it.

BPCE solved the rivalry between BP and CE (the “multiunit back-end problem”) of OI that jeopardized the creation of a joint data lake to attract start-ups (the “front-end problem”) by implementing a data protection strategy and incentivizing the sharing of raw data with an exchange system and the CEO’s support.

Motivating the sharing of digital needs

89C3 overcame the local banks’ reluctance to reveal their digital needs with its *Strategic Plan 2018–2020* that promotes the benefits of OI.⁴³ One of the most successful BP and CE joint projects with start-ups concerned automatic decisions and processes that achieved an estimated 6+ percent revenue growth per year at BPCE. Another more global success is the estimated revenue increase of 750 million euros per year and cost savings of 1 billion euros with the digital innovations developed by the start-ups in response to BP and CE’s local banks’ shared digital needs.⁴⁴

89C3 motivated BP and CE to share their digital needs by offering different incentives and processes according to whether the digital needs concerned a local bank’s current digital needs (i.e., needs they perceived as strategic for the short term and are ready to invest time and money developing solutions for) or future digital needs (i.e., needs the bank had neither time nor resources to undertake alone even though it knew they would provide competitive advantage in the long term).

89C3 asked all the local banks to agree on a “digital innovation wish list”—that is, digital needs critical for their own long-term future but which they lacked time, money, and capability to develop independently. 89C3 ranked the wishes according to the number of local banks supporting the need. For the top 10 digital needs, 89C3 spent time and money to find relevant start-ups, build the digital innovations with the start-ups, and scale them to all local banks. Each local bank was motivated to have its own digital wish be part of the top 10, so

89C3 organized a champion's club comprising employee sent by each local bank to share and convince the other champions about what they should prioritize. To push for their digital wishes, some champions even established coalitions by agreeing to vote for one bank's need in exchange for voting for another need. One CE manager explained, "We had agreed that I will help him prioritize his main wish, and he will do the same for me." Having 89C3 develop digital innovations directly related to a champion's local bank's anticipated future needs could save time and money and even produce a competitive advantage. One champion CE manager said, "I remember him telling me how important it was that he supports my wish list for a mortgage online loan solution, and he agrees for our friendship, and to be honest, he believes that I was crazy to be so involved in this war of wishes. For him, he had no time to think about innovation. However, he did not realize that mortgage online loan solutions were a growing market for me and could make my local bank attract new clients and save costs by automatizing the process."

89C3 decided to create a second process different from the wish list to motivate BP and CE to share their current digital needs. No local bank would share its current needs if doing so would highlight digital weaknesses or reveal local strategic plan to gain a competitive advantage of differentiation. Neither BP nor CE local banks shared its "current need list"—instead, each tried to find a start-up by themselves and develop a local innovation. Rather than feeling threatened by this situation, 89C3 considered the local banks' efforts a long-term benefit. 89C3 decided its role for current needs would be to help the local banks develop local digital innovation with start-ups—that is, help develop a first-mover advantage for the local bank that wanted to innovate. This scenario motivated local banks to share their current needs with 89C3, knowing that the group task force would not share that information with the other local banks and that sharing would bring additional support for finding a suitable start-up. This scenario is a long-term win for 89C3 because when a local digital innovation no longer

gives the local bank a competitive advantage, the local bank might exchange it for another digital innovation offered by other local banks and centralized by 89C3.

To overcome the "multiunit back-end problem," which jeopardizes the scale of relevant digital innovation from a start-up, 89C3 leveraged the collaboration on future needs and respected the competition regarding current needs by helping local banks develop customized local solutions directly with start-ups.

Facilitating co-development of digital innovations

89C3 overcame the local banks' reluctance to co-build and test the start-ups' digital innovation. Some of 89C3's biggest successes are Upslide, DermatoSanté, InMaps, Mon Petit Placement, I can help, Streetco, Dimelo, Datasulting, Quinten, and Poligma. In each instance, 89C3 identified and signed contracts with one local bank to co-build the solutions with start-ups.

To find a local bank ready to become a pilot bank and help an external start-up develop a solution that could be scalable for the entire organization, 89C3 made the local banks compete to be the pilot local bank. The winner would be the first to access and use the start-up's digital innovation. Having this first-mover advantage is promising for the pilot local bank because 89C3 grants it a time lag before scaling the innovation to all other banks. An employee at the CE local bank that became the pilot bank for the dematerialization of mortgage loan explained, "Being a pilot allowed us to speed up our own transformation and gave us a competitive advantage for the time between the release of the service and before the others start to use it."

89C3 decided to respect the competition among local banks and delay the distribution of a successful solution as a reward for a local bank agreeing to be a pilot bank. As a result, the pilot bank develops a solution that can be useful to all other local banks.

Framework to identify and resolve the “multiunit back-end problem”

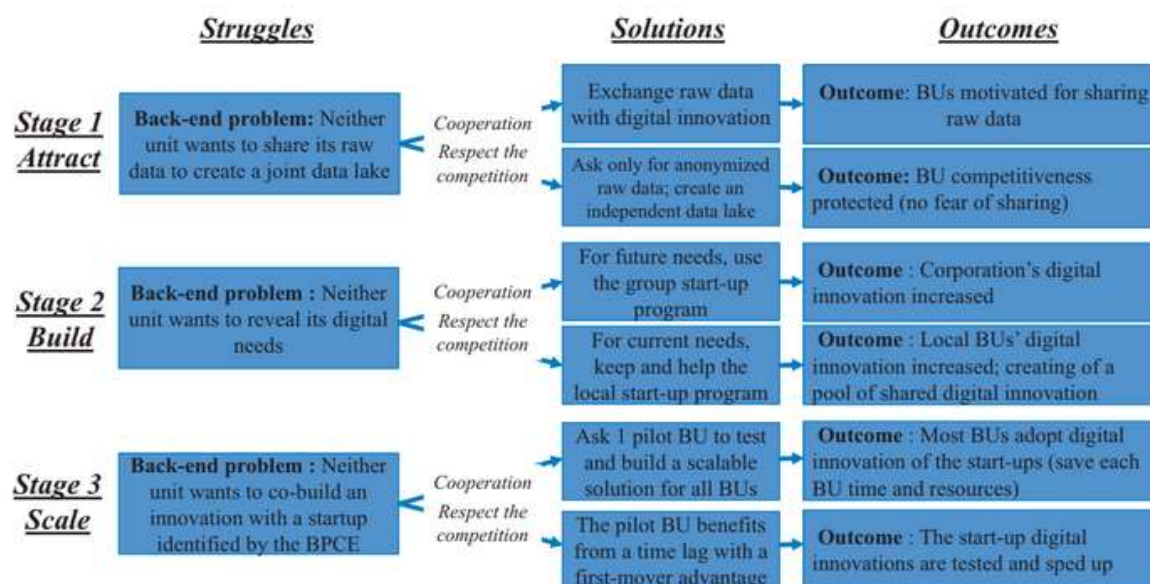
Prior research on internal competition suggests that we cannot assume that business units within the same group will be motivated to cooperate and collaborate.⁴⁵ The BPCE case supports the literature because its business units did not cooperate initially nor were they motivated to engage in an open innovation initiative with start-ups. As the BPCE case shows, the rivalry between business units may sabotage their engagement in OI initiatives (see “Struggles” in Figure 1). The three “multiunit back-end problem” are as follows:

1. Business units will not share their data due to internal rivalry, which cripples the creation of a data lake.
2. Business units refuse to reveal their digital needs due to internal rivalry, which makes it impossible to develop relevant solutions that can be implemented across business units.
3. Business units refuse to help a start-up identified by the group task force to build and test digital solutions. The business units want to prioritize their own start-ups and not lose the opportunity to differentiate themselves.

The “multiunit back-end problem” affects the entire process of corporate engagement with start-ups beyond the context of digital transformation—namely, attract the start-up, build the innovation, and scale it (see the three stages of the framework in Figure 1). It is a mistake to think that the “multiunit back-end problem” concerns only the rival business units’ adoption of the start-ups’ technology. As our case study shows, business units’ failure to engage and

collaborate can endanger the whole success of the front-end open innovation (i.e., the corporation's ability to attract start-ups).

Figure 1. Guidelines to overcome the "multiunit back-end problem"



Lessons learned to guide managers

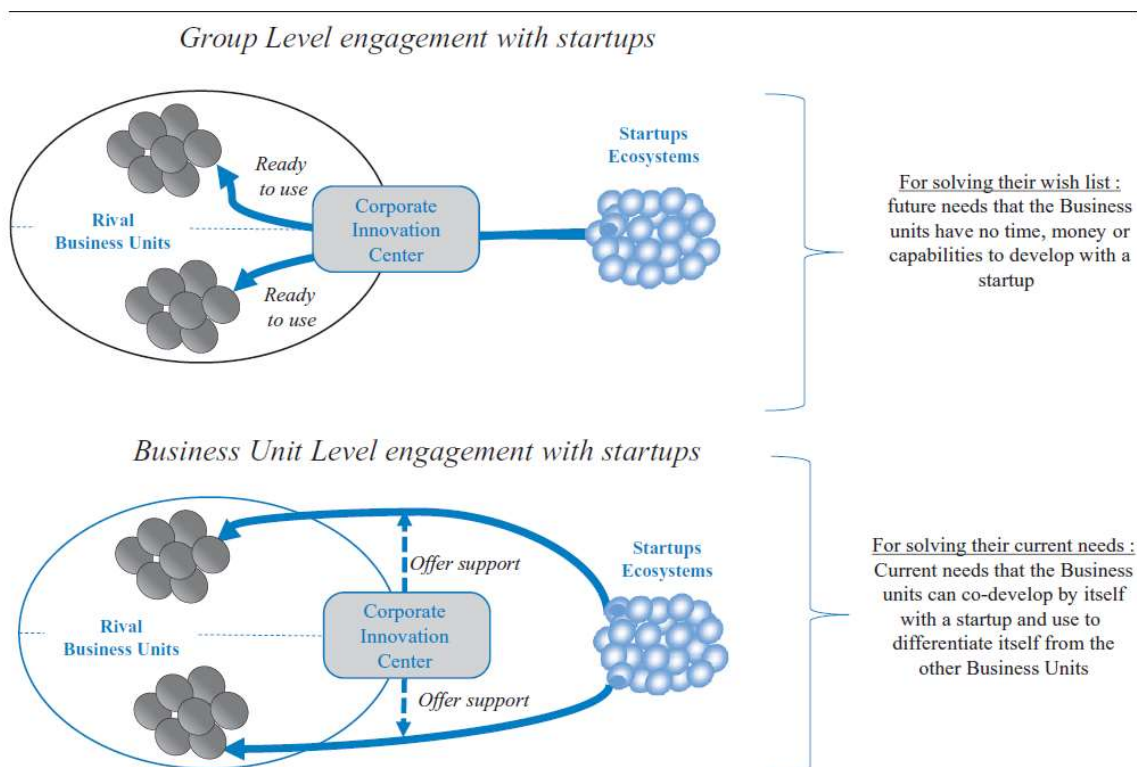
Our case reveals three key lessons learned that can guide managers to overcome the “multiunit back-end problem.”

First, a pattern emerged while solving the “multiunit back-end problem.” For each problem, the task force overcame the “multiunit back-end problem” by incentivizing group-level collaboration, while at the same time respecting the business unit competition (see the arrows of competition and cooperation in Figure 1). Essentially, the corporate innovation center task force in charge of open innovation needs to implement processes, using digital champions, which achieve three main missions: to stimulate the dynamics of digital transformation; to use digital technology among employees to achieve corporate digital transformation goals; and to innovate by seizing potential new digital opportunities identified by individual business units. The task force might focus on a digital innovation that the business unit did not have or offer

a first-mover advantage (what we call “temporal disconnect”) in terms of a time lag. The task force must also ask business units to collaborate only on tasks they cannot do alone—like developing a digital innovation for future needs for which they have no time or money or that would not hurt their internal competitiveness.

Second, the corporate innovation center task force needs to implement two levels of engagement with start-ups, one at the group level and one at the business-unit level. A group-level initiative to engage with start-ups should not impede the business units’ own engagement with start-ups (see Figure 2). A business-level initiative maintaining the local start-ups’ program can stimulate even more digital innovation done in collaboration with start-ups by developing solutions responding to different local needs—that is, current needs that can give a first-mover advantage for the business level.

Figure 2. Two-level of corporate engagement with start-ups: the linkages to start-ups



Third, corporation innovation center can resolve the “multiunit back-end problem” by helping business units overcome their fear of sharing data to create a joint data lake by asking only for the anonymized raw data and creating an incentive system in which they exchange raw data for authorization to use the digital innovation developed. They can motivate a business unit to build and test a solution with a start-up that is scalable to all business units for a successful innovation. Hence, the creator benefits from being a digital banking pioneer before distributing the innovation to all business units with lower cost and less risk. Corporations can motivate business units to share their current needs and help them engage directly with the start-up rather than participating in the group start-up program.

Our framework is relevant for any corporation engaged in a digital transformation that requires their rival business units to collaborate to attract, build, or scale the innovation created by start-ups. Corporations looking to create a joint data lake with competitive business units can use our framework and lessons learned to reduce costs and risks and enhance the speed of their digital transformation.

Conclusion

Internal business units' rivalry as a barrier to digital transformation with start-ups has not been studied widely. Our case study offers three contributions to the open innovation literature, and more broadly to strategic management, organizational theory, and information systems management.

First, previous research has stressed the existence of a back-end problem and shows that business units do not always absorb the start-ups' technology identified by the open innovation team. Researchers have suggested introducing a business-units' level into the open innovation discussion, which previously focused on the corporate level. Our case on BPCE

confirms the need to introduce the business-unit level and calls on researchers and practitioners to rethink a relationship that was mainly considered dyadic (i.e., OI task force and start-ups) as a triadic relationship (i.e., business unit, OI task force, and start-ups) (see Figure 2).

Second, large companies are not homogenous entities; rather, they are multiunit organizations in which the units are encouraged (or forced) to compete and cooperate with each other. These internal relationships, which are simultaneously cooperative and competitive, are called "internal cooptition." While internal cooptition has been shown to impact an organization's global innovation performance, the BPCE case study shows that business units' internal rivalry also impacts corporate and start-up collaboration and requires careful and specific management. Conceptualizing large companies in terms of multiple competing business units⁴⁶ allows us to add a "multiunit back-end problem" contingency variable to others explored previously in the open innovation literature, such as the management of organizational change, the relationship with innovation sources, the protection of critical know-how, or avoidance of already existing knowledge.⁴⁷ In the emerging literature about the back-end problem of open innovation, researchers have not studied business units' rivalry extensively. In addition, this issue is not widely studied in the broader literature about the barriers of open innovation results. Our case study demonstrates the importance of considering, assessing, and evaluating the "multiunit back-end problem."

Third, our managerial framework highlights that dealing with the "multiunit back-end problem" requires a cooptitive organizational design that simultaneously leverages cooperation and competition. Our study confirms cooperative managerial solutions already identified in the open innovation literature for outside-in knowledge from start-ups into multiunit organization.⁴⁸ But our case study shows that in addition to the cooperative aspect,

respect for and leveraging the competition is also needed in this context⁴⁹ as show by the literature on the management of coopetition. The empirical managerial solutions identified to overcome the business rivalry and unlock the corporate-start-up collaboration on digitalization transformation program—namely, the anonymization of the data, the addition of a champion level in charge of ensuring the collaboration and competition, the incentive systems (resources), and the temporal disconnect—are managerial tools already identified in the literature on managing internal coopetition and digital transformation, but to our knowledge, they have never been connected to the open innovation results problems.⁵⁰

Finally, the case study calls on leaders to rethink the role of the corporate accelerator in managing the sharing while simultaneously protecting knowledge from being re-used in a hurtful way by other business units. Until now, the corporate accelerator role was limited to managing the front-end problem of open innovation—the sharing/protecting of tensions between start-ups and the corporation⁵¹; our case study revealed that the corporate accelerator role also includes dealing also with the “multiunit back-end problem”—namely, the sharing/protecting of tensions between the rival business units.

The “multiunit back-end problem” is not always easy to detect because business units might resist the open innovation initiative with start-ups without necessarily explaining that the internal rivalry is the reason for their concerns. Concretely, the business units publicly express global concerns about the relevance of the start-ups identified by the corporate accelerator instead of expressing their concerns about revealing data or technological needs or concerns about strengthening the other business units for free. One empirical observable fact of this “multiunit back-end problem” is that the business units defend their individual start-ups program (i.e., those dedicated to the business unit) instead of a corporate one. Identifying the

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business units' rivalry is essential to ensuring open innovation success and implementing processes that resolve the "multiunit backend problem."

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Appendix 1. Method

Research goal

Drawing from our broad investigation of the banking sector and in-depth examination of the process by which the BPCE Bank's group task force 89C3 struggled to conduct its digital transformation strategy by engaging with start-ups, we examine the limitations of open innovation due to the internal rivalry between business units and how to overcome them.

The motivation behind the choice of BPCE

We chose BPCE because it is an exemplary case for studying internal cooperation: it has two competitive divisions, BP and CE, which were separate banks of more than 100 years and 200 years, respectively. In 2009, they merged to form a unique group. Since 2009, dynamic cooperation has occurred in siloed open innovation at the local level and in a combination of local and global innovation with start-ups.

Data collection

We collected both primary and secondary data to enable the use of triangulation techniques to identify how the knowledge was expected to flow and how it actually flowed from the front end of OI (i.e., start-ups engaged with the corporation) and the back end of OI (i.e., the rival business units), and what struggles impeded its flow. We use semi-structured interviews (60–90 min) over 10 years (from 2009 to 2020) with managers at several levels: the task force 89C3 engaging in the OI process with startups; BP and CE senior and middle managers; and the founders of the start-ups. The interviews occurred on-site at the BPCE office in Paris, Aix en Provence, Montpellier, and Toulouse. Performing a retrospective investigation before the group's strategic intention to engage in open innovation (from 2017 to the present) allowed us to describe the history of exposure by offering a temporal dimension to understand why and how the process of opening to start-ups has occurred over the years. During the first period before the central initiative of open innovation, the interview guidelines focused on local initiatives with start-ups and the strategy to buyout digital start-ups. For the second period, from 2017 to 2020, the interview guidelines concentrated on understanding the creation of the group task force for engagement with start-ups and its coexistence with the BP and CE start-up programs. Almost all key interviewees (BP and CE executives) remained throughout our 10 years. However, for key interviewees at BPCE Group, we add new people when the group task force 89C3 was created in 2017.

We triangulated these primary data with data collected from secondary sources in order to identify and validate the main stages clearly. The secondary data used to triangulate the primary data were obtained by videotaping six entire 89C3 meetups and nine workshops called "keynotes," during which start-up project leaders and 89C3 managers presented their digital solutions. The duration of the videos is

variable (15 to 90 min). All videos were transcribed into 154 pages, which allowed us to observe 82 involved start-ups. We combine triangulation with documents from both divisions and BPCE from 2009—that is, financial reports, internal documents and studies, press releases, specialized books, 89C3 open data platform, etc.—to achieve data triangulation. A significant source of secondary information was the annual financial reports of the investigated banks and divisions, as they describe the organizational evolution and the major strategic choices implemented in response to environmental pressures.

Data analysis

We started with an exploratory phase of all periods. Two main results emerged: (1) a period of three years of struggles in getting results from the engagement with start-ups for accelerating their digital transformation; and (2) the rivalry of the business units appeared as one of the main reasons behind the lack of results. This second result captured our attention because, to our knowledge, this business unit rivalry has not been widely considered by open innovation practitioners and academics. Thus, we went through a second round of analysis, in which we aimed to identify and code (1) the elements defining the coexisting competition and cooperation activities (proving the existence of internal rivalry); (2) the manifestation of the struggles related to getting results from BPCE's initiative with start-ups due to this rivalry; (3) solutions implemented; and (4) outcomes of the solutions. The specific purpose is to understand why managing the competitive rivalry is important (i.e., how it can impede the open innovation initiative success) and how to manage the internal competitive tensions in open innovation. The analysis phase mobilized knowledge of digital innovation in the banking sector with the help of specific documentation of banking and consulting companies' reports such as McKinsey & Company, KPMG, E&Y, Accenture, Bain & Company, or Capgemini.

In this second data analysis phase, as expected, we identified forms of rivalry behavior that impede the success of OI projects. What emerged was a specific organizational design that simultaneously leverage cooperation and competition, and not only the cooperation between the business units as we could expect. For instance, we observed a coexistence of different ways for knowledge flows from the front end to the back end (that is, a corporate accelerator initiative that is based on business units'

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collaboration and a decentralized business unit initiative that is more based on respecting the competition between the business units.