Collected blogs on ecosystems

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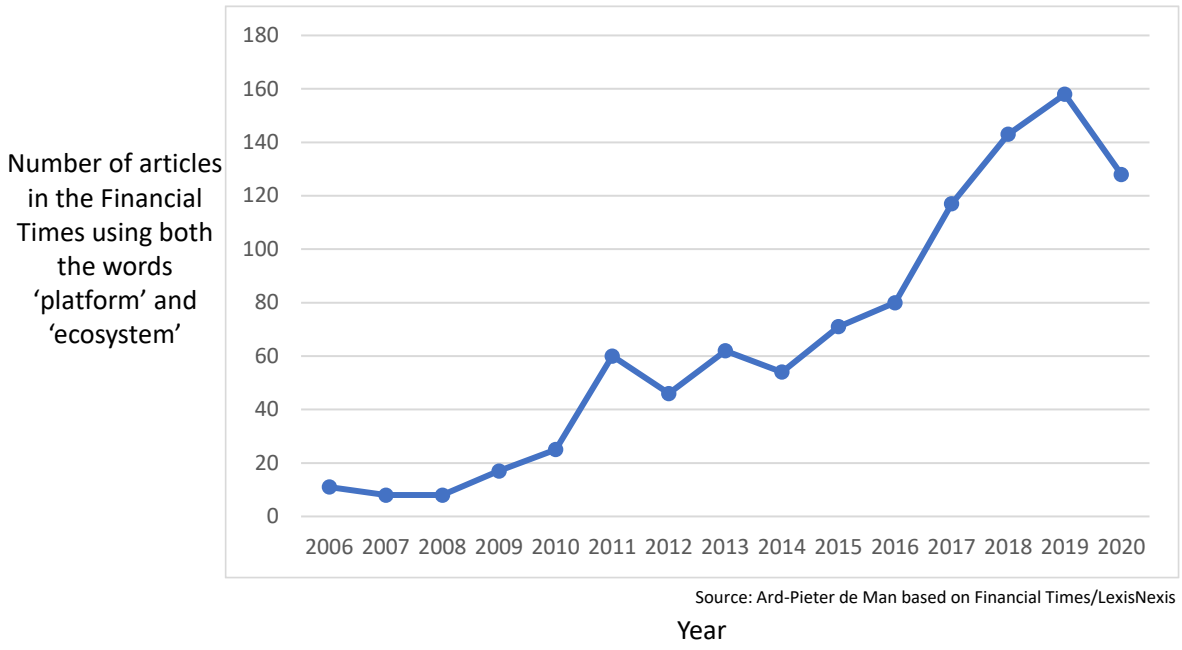
1. Platform ecosystems: Do they still matter or are they past their peak?

Why are platform ecosystems relevant?

Platform ecosystems are among the most written about topics in management and organization today. The figure below shows that the attention for platform ecosystems has increased significantly over the past 15 years. The number of articles published in the Financial Times that contain both the word 'platform' and the word 'ecosystem' was 11 in 2006. Growth really took off after 2017, with a highpoint of 158 articles in 2019. 2020 saw a drop to 128. Is this a Corona-dip caused by the fact that Corona did not leave much space for other news in 2020?. Or is the hype around platform ecosystems past its peak?



Source: Ard-Pieter de Man based on Financial Times/LexisNexis

What is a platform ecosystem?

A platform offers a shared set of assets (technologies, capabilities, standards) that can easily be recombined into diverse applications (for more on platforms see the truly excellent book Platform Revolution by Parker, Van Alstyne and Choudhary: https://amzn.to/3br7isv). Organizations and individuals that are active on a platform constitute the platform ecosystem. They collaborate online with the platform and with each other, creating a system of continuous innovation. Most of the partners in an ecosystem, like app developers, have standardized agreements with the owner of the platform which regulate profit sharing, access rights and the further do's and don'ts of the platform. Superplatforms like Google, Apple, Amazon and Facebook have become household names. Their ecosystems consist of thousands of organizations, large and tiny. If you want to know more about

the characteristics, pros and cons of platform ecosystems see our book *How to survive the organizational revolution* (https://amzn.to/3aCnuH8).

What is the reason behind the increased attention?

The main reason behind the increasing attention for platforms is that they are no longer used exclusively by online players. Brick-and-mortar companies also have discovered the power of platforms. In an interesting study a few years ago, Peter Evans and Anabelle Gawer took stock of the number of platforms. You can find their interesting research here: https://bit.ly/37zgwAu. Their list of platforms included mainly 'born digital' platforms. Doing a similar study today would have to include the new trend that traditional companies have started to create platforms. Many of them are enabled by the Internet of Things. Some examples are:

- John Deere's platform connects farmers and their equipment with partners like Kespry (drones) and the WeatherChannel. The platform gives advice to farmers about many aspects of their business
- Haier's HOPE (Haier Open Partnership Ecosystem) platform connects developers to Haier's appliances group to embed IoT in kitchen appliances and washing machines
- Bayer's Fieldview helps farmers optimize their yield through datasharing
- Philips operates a number of platforms, ranging from Male Grooming with advice about shaving and beard styles to Pregnancy+ that helps ensure a healthy pregnancy
- Signify's Interact IoT platform offers services based on information gathered via sensors in LED lighting
- Santander's Openbank initiative makes financial services available online via an ecosystem of developers

This is only a short list of established enterprises that build platforms. The key lesson is clear though: platform ecosystems are useful in any business, not just for the Googles and the Facebooks. Platforms set up by incumbents may perhaps not get the visibility of these superplatforms, but they still play an important role in transforming the economy. Corona, if anything, will stimulate the development of such platforms further, now that we have seen what they can do for us. Therefore the Corona-dip is a temporary artefact and a thorough understanding of how to manage platform ecosystems is indispensable for any manager today. The next blogs in this series will highlight some of the issues managers face.

2. The four challenges of managing platform ecosystems

The challenges of ecosystems

With the increase in the number of platforms, ecosystem management faces new challenges. The number of partners involved and the dynamics of a platform environment, raise new issues that require new answers. I identified four specific challenges in managing platform ecosystems that ecosystem managers need to address (for more an the role of ecosystem managers see https://bit.ly/3lmkuT5). The table below summarizes the four challenges and the key issues that have to be resolved.

Type of challenge	Key issues
Functional & technical	Getting the right number of partners Getting the right type of partners Getting apps with the right technical quality
Legal & ethical	Ensuring partners stay within legal boundaries Ensuring partners stay within ethical boundaries
Temporal	Keeping the platform attractive for partners Ensuring partners update their technology Adapting partnering strategies over time
Competitive	How to deal with multi-homing How to deal with co-opetition

Source: Ard-Pieter de Man

Challenge 1: Functional & technical

The first challenge is functional and technical. Getting the right number of partners is easier said than done. Platform owners may face a chicken-and-egg problem: a platform requires customers to be interesting for vendors to engage on the platform, but without vendors, customers will not join the platform. When that problem is tackled the next question arises: how many partners is enough? With too few partners the platform is not attractive; too many partners may make the platform difficult to control. Next to the number of partners, the partner type is also relevant. Some platform may seek a highly diverse set of partners. On the big platforms you can find apps about any conceivable topic. Other platforms may choose to specialize in one area like games or fashion. Whatever choice you make, you will need to attract the right partner type for your platform. Finally, the partners need to have the right technical quality. An app that does not integrate seamlessly with the platform may chase customers away. Removing low quality apps is an important challenge connected to platform ecosystems.

Challenge 2: Legal & ethical

The second challenge relates to the behavior of partners. Once on board, they should remain within legal boundaries, but also respect the platform's moral boundaries. Fake news, inappropriate videos

or calls for illegal actions can undermine a platform's legitimacy. Illegal or unethical behavior is not limited to individuals sharing malicious content on Facebook or Youtube. Ecosystem partners may also engage in undesirable activities. Curating the content and the ecosystem therefore also requires procedures to prevent misbehavior and to correct it when it occurs. But how to identify misbehavior among thousands of actors on your platform?

Challenge 3: Temporal

A third set of challenges presents itself around temporal problems. Platform ecosystems and their environment change over time. New technologies emerge, new players present themselves, incumbent players may lose out. The platform owner will have to keep up with the speed of change and keep the platform attractive for the ecosystem partners. This will often require the development of new technologies and standards. Such technical changes to the platform have consequences for the partners. When a technology is updated, apps also need to be updated to remain compatible with the latest technology. If apps developed by ecosystem partners are not updated, a platform may end up with outdated apps. That will ruin the customer experience. Finally partnering strategies need to be adapted to changing circumstances. Some partners may become more relevant, others less so. Such changes require a continuous rethink about how to engage with ecosystem partners.

Challenge 4: Competitive

The fourth and final challenge lies in dealing with competition on your platform. One aspect revolves around multi-homing. Multi-homing occurs when an app is available on several platforms. This reduces the opportunity for platforms to differentiate from their competitors. A second aspect revolves around co-opetition: at any point in time platform owners compete with their ecosystem partners over the way they share value. An example is Apple's recent conflict with app developers that forced them to lower their commission rate from 30% to 15% for small partners (https://tcrn.ch/3litKaA). Ecosystem partners may even create their own competing platform or a certain app may become so popular that it forms a platform within a platform. Another form of co-opetition may occur when partners in the ecosystem compete with each other. Sometimes that works out well, sometimes it is less desirable. This mix of cooperation and competition is a characteristic of platform ecosystems (for more about different forms of co-opetition: see https://bit.ly/30LKggg).

Are the challenges relevant for all platform ecosystems?

Yes, but the extent varies. An important variable to consider is the openness of the ecosystem. The more open an ecosystem is the more partners may join, but the less able you are to select partners based on competence or integrity. So you may attract a fair number of partners, but whether they are the right ones remains to be seen. In addition, the more partners on the platform the more difficult it becomes to monitor their behavior and their competitive moves. Obviously in some markets, some problems may be more relevant than in others. Highly specialized B2B markets may have higher technical challenges and lower ethical ones with their partners, whereas for twitter the reverse may be true.

How to deal with the challenges?

To deal with these challenges platform owners deploy various tactics. In the next episode of this blog series, I will give an overview of such tactics. But a good first step is to be aware of the challenges I mentioned: do they exist in your company? How do you deal with them now? Which challenge did you overlook? Do you dedicate sufficient resources to overcome the challenges?

3. How to curate your platform ecosystem

Partner ecosystem curation refers to the processes you need to select, to care for and to disengage with parties working on your platform. A thorough curation process is necessary to overcome the challenges that come with platform ecosystems. In blog 2 in this series I identified four such challenges: functional & technical challenges, legal & ethical challenges, temporal challenges and competitive challenges. As Alan Michaels said in his response to that previous blog, managing ecosystems is a huge and complex topic. It took me quite some reading, talking to people and thinking to identify and define these four challenges.

But the real hard work is in dealing with them. None of the challenges can be adequately dealt with by a few simple solutions. A clear and well-thought out policy of partner ecosystem curation is required.

In the table below I give an overview of two dozen techniques companies use to curate their ecosystem. This is not the place to run through all of them but at least note the following main points:

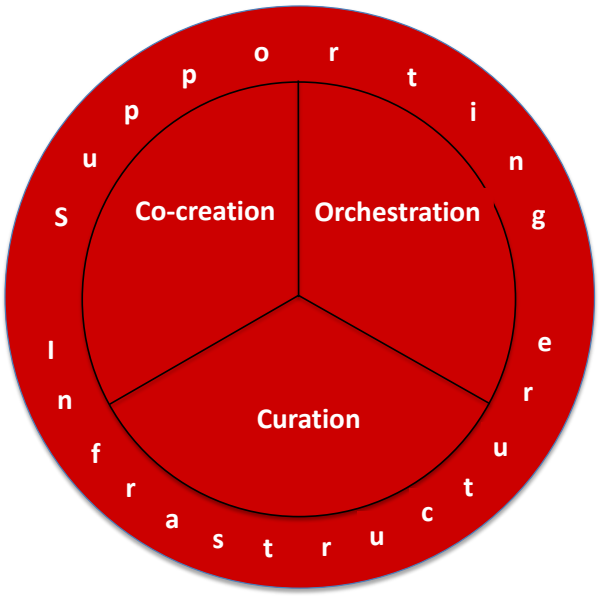
- Some techniques affect more challenges. A thorough check on partners before you let them into your ecosystem and onto your platform will help to address several challenges. When implementing one of the techniques, think about how this may affect the other challenges, positively or negatively.
- Each technique comes at a price. Take the example of the partner check. A thorough partner check will slow down your ability to scale, because it takes time to check partners. Think about the cost/benefit ratio of using each technique.
- Mix of rewards and punishment. Ecosystem curation means rewarding the good, but also punishing the bad. The punishments can be hard (expulsion from the platform) or soft (a little nudge to use the latest software update). Punishments may undermine relationships with partners, but letting partners get away with misbehaviour undermines the quality of the platform. You may have to be a benevolent dictator.
- High level of online work. Much curating can take place using online mechanisms. Digital technology makes it possible to monitor substantial amounts of business partners on your platform. Before setting up your ecosystem, think about what information you need to monitor partners and what information helps to keep them happy.
- Obviously companies don't have to implement all mechanisms. The right balance is determined by how open or closed you want your ecosystem to be. In one of my later blogs I will deal with that topic.

Now here are the techniques for platform ecosystem curation, let me know if I missed any:

Type of challenge	Management techniques
Functional & technical	Offer attractive partner business models Offer standardized api's, sdk's, sandboxes Build an online developer forum, make it easy to find manuals, create a helpdesk Reward good behavior (e.g. with more access to technology, selective promotion or better information) Use customer ratings Organize hackathons Offer partner directories Set up a certification programme
Legal & ethical	Do a partner check Set membership rules, community guidelines Use data and privacy protection tools React to customer feedback ('report this app') Deal with customer claims quickly Human oversight Removal of apps
Temporal	Simplify technical maintenance of apps Set up a team to stimulate developers to update their apps Update membership rules to reflect changed circumstances Inform ecosystem about pending changes Warn users that an app has not been updated in a while Have competing apps on the platform
Competitive	Create exclusive alliances with top partners Allow more/fewer apps on the platform to influence competition Continuously adapt the business model to maintain control over the ecosystem Avoid multihoming by increasing partner interaction/building a community/using loyalty programs Adjust licensing rules/restrict use of APIs to avoid copying Take legal action Source: Ard-Pieter de Man

4. A governance framework for ecosystems

With thousands of parties active on a platform: how do you govern your ecosystem? In previous blogs I explored the challenges of managing ecosystems and the techniques to deal with them. I explained that curation of the partner ecosystem is one of the keys to effective ecosystem governance. The figure below presents an overall framework for the governance of platform ecosystems. Four elements require attention.



Orchestration defines the playing field and the rules of the game of the ecosystem. It specifies the desired direction of the ecosystem, its scope and the conditions partners need to comply with when working with the platform. The scope consists of the regional, technological, functional or market areas in which partners are sought. The conditions define the business models, decision-making mechanisms and the norms and values partners need to adhere to. These conditions should enable partner interaction with the platform and the interaction among partners. Platform owners can signal change by adapting the direction, scope and conditions. Whether their partners are willing to comply with such changes is not in their hands: platform owners have no full control over their ecosystem.

Curation refers to the selection/attraction, organizing, and removal of individual players on the platform within the context determined by the orchestration activities. So where orchestration is about the playing field and the rules of the game, curation is about the individual players. Who do you want in your ecosystem? How would you like them to behave? As shown in my previous blog, many mechanisms are involved in this (see the blog here: https://bit.ly/3w3GGGx). Note that individual players also may need to be removed: partners that do not adhere to the platform rules may undermine the platform. Also note that platforms can be very restrictive in the amount of

players they allow to participate or can be very generous in giving players access. Striking the balance between open and closed requires some skill. A later blog will deal with that question.

Co-creation is about the act of joint innovation with players in the ecosystem. Co-creation can occur in three ways. The first occurs between the platform owner and one or more ecosystem partners. The second occurs when the platform acts as a matchmaker and connects two or more players and next lets them innovate together. The third occurs when partners find each other on the platform without the intervention of the platform owner. The continuous creation of new value propositions that follows from this will keep the platform relevant to both customers and partners.

The *supportive infrastructure* exists of the technologies and organizational activities that support the orchestration, curation, and co-creation. The tangible aspect of the supportive infrastructure is the platform consisting of databases, algorithms, application programming interfaces (apis), and software development kits (sdks) that enable partners to interact with the platform. The organizational infrastructure consists of the people involved in managing the ecosystem. Booking.com for example employs people who visit hotels to learn how hotels use Booking.com and how their customer journey can be improved (see the full description of Booking.com in this book: https://amzn.to/2PApjw4).

The governance concept is a circle to indicate that developments in ecosystems are non-linear. Ecosystems don't start with orchestration, next start curating the network and end with co-creation. In reality all three processes take place at the same time. Co-creation may open up a new field of innovation that automatically attracts new partners and next requires changes in the orchestration or the supporting infrastructure to really profit from the new opportunity.

This governance framework is not only applicable to platform ecosystems. I have also applied it to value proposition based/innovation ecosystems and business ecosystems. The nature of the four elements in the framework differs dramatically depending on the type of ecosystem You can find more information about this in an article I wrote for the Alliance Quarterly: https://bit.ly/3u3AzQB.

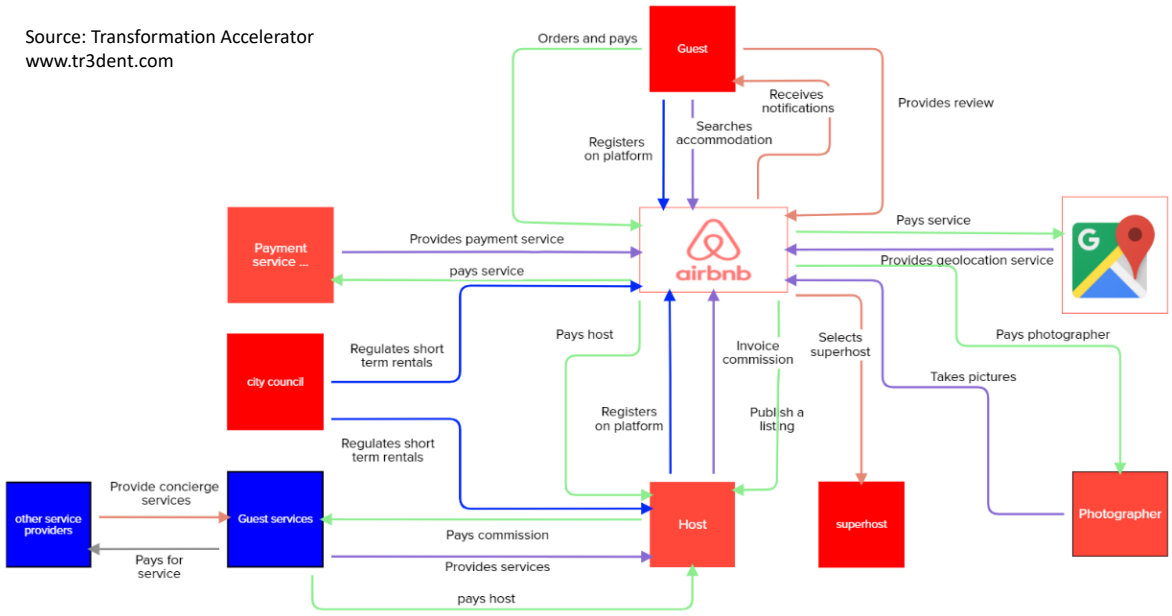
Did you pay attention to all four elements of the governance model?

5. Ecosystem value mapping

How to design and analyse your platform ecosystem? One of the most useful tools for doing this is creating an ecosystem value map. The first time I saw this approach was in the book Digital Capital by Lowy, Ticoll and Tapscott dating from 2000(!), but maybe there are earlier sources. It struck me immediately as a valuable way of looking at complex constellations of businesses. However, it took a long time before companies started to think on an ecosystem level and therefore the use of value maps took some time to get of the ground. Now, we're there. Value maps have become indispensable for ecosystem management.

So what is an ecosystem value map? The figure below gives an example of AirBnb's ecosystem map around guest services, provided by www.tr3dent.com whose Transformation Accelerator offers the capability to make these maps. The figure depicts the most important parties that are active in the ecosystem and the relations between them. It also indicates what the sources of value are that flow between the various parties. Value includes not only financial value, but also data, services, information, knowledge, or regulation. The different line colours indicate these different types of value.

Source: Transformation Accelerator
www.tr3dent.com



Such value maps help to create an overview of ecosystems. Visualization of ecosystems has a number of benefits:

- You learn to understand how the ecosystem works, how it generates value and for which parties. This is important because you need to understand how you and your partners can benefit from the ecosystem;

- It creates alignment within your company around your vision on the ecosystem. Value maps are a great tool to communicate. A picture says more than a thousand words. In addition, the process of making a value map will lead to valuable discussions within your organization.
- You can add partners or relationships and thereby spot new opportunities for value creation or value appropriation;
- It is easier to construct different 'what if…' scenario's based on the visualization and thereby learn how your ecosystem may evolve. As ecosystems are dynamic your control points in the ecosystem may change over time. Therefore it is necessary to analyse a couple of scenarios;
- It helps you understand indirect flows of value creation. Spotting indirect flows of value creation is an important skill in ecosystems. An investment in partner X may not benefit you directly, but through effects on partner Y. For example, people don't pay Facebook anything for using the Facebook site, but advertisers pay for the data people generate. Another example is the Dutch ecosystem around tax and wages. By investing in the relationship with developers of software for salary administration, the software improves and companies using that software are able to file taxes faster and with fewer mistakes. The tax agency does not benefit directly from collaboration with software developers, but the indirect benefits generated by the clients of the software developers are huge. Such indirect value flows are much easier to identify with a value map in front of you.

Even more fun is to be had when you invite stakeholders to make the ecosystem map together with you. This will make the system more complete, helps you to align your stakeholders around your platform and in my experience it also leads to the generation of many new ideas.

What does your value map look like?

6. Platforms vs value prop ecosystems

A constant source of confusion is that the word ecosystem is applied to anything and everything. One of the most important distinctions for companies is the difference between a platform ecosystem and a value proposition ecosystem. The main focus of this blog series is on the former. Platform ecosystems however earn their money from value proposition ecosystems built on the platform. The figure below shows the main differences. It is part of a table comparing new organizational forms from my book with Pieter Koene and Martijn Ars How to survive the organizational revolution (https://amzn.to/3tRWj2e). A value proposition ecosystem is a set of companies collaborating and innovating around a specific value proposition for a client or a market segment. Think about HP, Nvidia, Dassault Systèmes, VMWare and Ansys who jointly deliver virtual desktops to Honda. Or International SOS that may combine services from Uber, AirBnB, hospitals and psychologists to support expats. B2B platforms like those supported by IBM, Microsoft or SAP offer all kinds of technologies. System integrators combine them with other technologies to deliver a value proposition to their clients. Whereas one platform may support multiple value propositions, a value proposition based ecosystem supports only one.

PLATFORM ORGANIZATION	· SINGLE PLATFORM SUPPORTS MULTIPLE VALUE PROPOSITIONS · COMPLEMENTORS WORK ACCORDING TO STANDARDIZED CONTRACT · PLATFORM OWNER HAS ORCHESTRATING ROLE IN COORDINATION	· HIGH ECONOMIES OF SCALE OR NETWORK EFFECTS EXIST · STANDARDIZED INTERFACES FOR ALL PARTNERS CAN BE DEFINED · CLIENTS ARE ABLE TO INTEGRATE COMPLEMENTING SERVICES THEMSELVES
VALUE PROPOSITION BASED ECOSYSTEMS	· ONE ECOSYSTEM DELIVERS ONE VALUE PROPOSITION · ECOSYSTEM PARTNERS WORK ACCORDING TO CUSTOMIZED CONTRACT · JOINT COORDINATION	· CLIENTS DEMAND INTEGRATED SOLUTIONS NO FIRM CAN DELIVER ON ITS OWN · HIGH ECONOMIES OF SKILL · PARTNERS HAVE A HIGH LEVEL OF COLLABORATIVE BEHAVIOR

Excerpt from: De Man et al. (2019) How to survive the organizational revolution, p. 203

The dynamics of managing these value proposition ecosystems differ from managing platforms. In fact it is more akin to managing multipartner alliances. In value proposition ecosystems companies work according to customized contracts and engage in joint coordination around their solution. Note that most platforms have value proposition ecosystems, but that value propositions ecosystems may function without a platform.

With Alliance Best Practice and Trident I am working on a system to assess the maturity of value proposition ecosystems. Elements we consider relevant are:

- Strategy: What is the vision behind the value proposition ecosystem?
- Culture: To what extent are value proposition ecosystems embedded in your company mindset?
- Process: How fast and how good are you in managing value proposition ecosystems?
- Enablement: How do you support the go-to-market of your ecosystem?
- Control: What is the governance model for the ecosystem?
- Structure: Is there clarity about who does what in your ecosystem?

As you can see, these elements differ substantially from what makes a platform ecosystem successful. For instance, the level of human interaction is much higher and the level of standardization much lower. Because much of the value of platforms is generated by value proposition ecosystems, they need to build up skills in managing them.

7. Rainforests or walled gardens: How open should your ecosystem be?

A major decision for platform ecosystems is the extent to which an ecosystem should be open to everyone. A closed ecosystem has its benefits in terms of coherence and regulating competition, but it runs the risk of not sufficiently tapping into the creativity and capability of others. An open ecosystem may benefit from the latter, but has considerable costs in terms of governance (as pointed out in my previous blogs). Haier's CEO Zhang Ruimin introduced the walled garden versus rainforest metaphor to clarify the difference. A neatly maintained walled garden (closed ecosystem) has its pros, but does not have the richness and diversity of a rainforest (open ecosystem). So what is the optimal level of openness? As with any business issue, the correct answer to this question is: it depends. But on what? I will discuss that below, but first: what is openness?

What is openness?

Openness of platforms ecosystems is about four questions:

- Who is allowed access to the ecosystem? Is anyone allowed in or only partners that meet certain strict criteria?
- What do partners get access to? Is it data, source code, clients, or can they participate in decision-making processes?
- To what extent do they get access? For example: do they get access to all data forever or to a part of the data for a limited period of time?
- How easy is access? Can partners just sign up via a site or is there a procedure to vet prospective partners?

The question of openness is not a simple yes/no issue. There are many variables to consider and hence there are many grey areas. Roughly we can distinguish between three prototypes:

- Closed ecosystems characterised by centralized ownership of intellectual property and a limited number of partners that co-create new functionality. In this case the platform often is the product sold to customers. Think about SAP Hana or Microsoft Windows.
- Managed ecosystems have centralized ownership, but permit a larger number of partners to cocreate new functionalities, usually via standardized interfaces. Facebook and Apple are examples here.
- Open ecosystems in which all intellectual property is shared with anyone who wants to co-create new functionalities. Android and Linux are known examples here.

When to be more open or closed?

I identified nine relevant questions to ask to get a sense of how open your ecosystem should be. The nine questions are in the table below.

How essential is the platform for monetization?	If you make your money by selling subscriptions or licenses to the platform, closed is a better option. If you monetize the platform by selling complementary services, a more open ecosystem may make sense
Do consumers fear becoming locked-in to one technology?	If they don't, your platform ecosystem can be more closed; if they do, you can be more open
Do ecosystem partners fear becoming locked-in to one technology?	If they don't, your platform can be more closed; if they do, you can be more open
Do the benefits of having many ecosystem partners on the platform outweigh the disadvantages?	If your partners benefit from having more partners in the platform ecosystem you may be more open, if they feel that too many partners means too much competition, you need to be more closed
Do you need the creativity of external partners to innovate the platform?	If yes, you need to be more open. If no, closed is an option
Are high investments required to maintain the core platform?	If yes, capital needs to be accumulated which is usually easier when one party is the owner and hence the platform ecosystem may be more closed
Are you willing and able to support high governance costs?	Open ecosystems come with high governance costs. If you cannot or will not invest in the required governance, a closed platform is a better option
Is platform coherence important?	If yes a more closed ecosystem is required. If coherence is less of an issue, you can be more open
Do you have many competence gaps to fill before your platform is commercially attractive?	If no, opt for closed. If yes or if you cannot predict which competencies clients will value: open up

Rarely all these elements point in the same direction. Choosing the right level of openness requires managerial judgment. Still, running through these questions and discussing them in your team may give you a much more sound basis to choose the right level of openness. I am curious to hear any other variables you think are relevant to make the open/managed/closed trade-off.

Note: For the theoretical background behind the questions in the table I refer to Boudreau (2010, https://bit.ly/3ooEIwH), Gulati, Puranam and Tushman (2012, https://bit.ly/3yjYEp6), and Nambisan and Sawhney (2011, https://bit.ly/33NDSA7).