# CHAPTER 1

# THE ECOSYSTEMS OF ORGANISATIONS

## 1. Business Ecosystems

In 2019 it was reported, in the UK's Guardian newspaper, that 40% of all insect species were in decline, whilst a third were endangered. Now, this isn't just bad news for insects, it's also bad for birds and small mammals! Why? Because they eat insects! So this means that without a food source, their numbers are also in decline. What this example teaches us is that when one member of an environmental ecosystem is affected, the rest of the ecosystem is too.

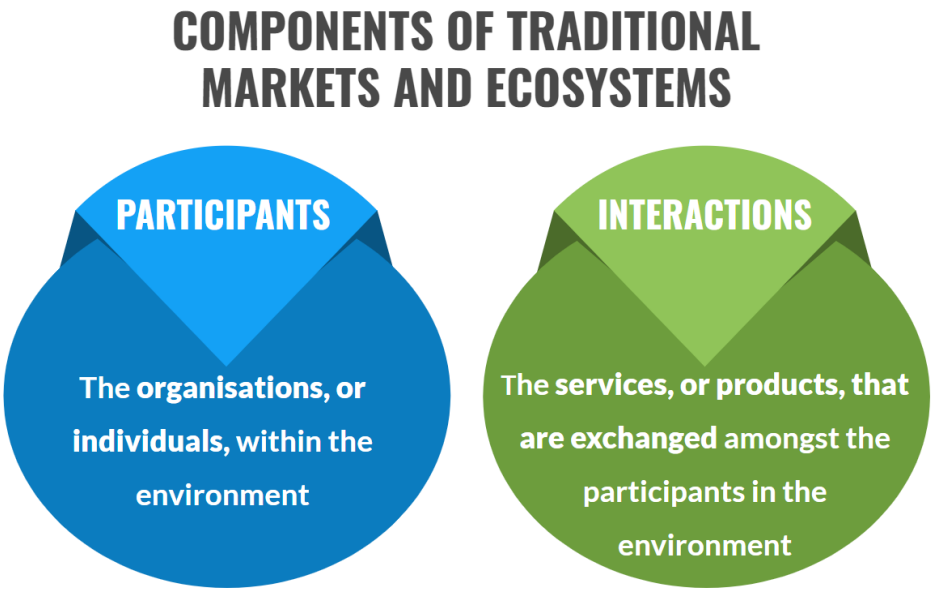
And that's similar to a business ecosystem, which is in basic terms **a network of companies, competitors, products and stakeholders, such as suppliers and customers**. Just like in an environmental ecosystem, all these separate parts **work together in a way that makes them greater than their individual elements**; if one element was to disappear, it could have an effect on the business environment.

Here's a more formal definition of business ecosystems from Marshall, Harmer and Davidson:

"**An ecosystem is a complex web of interdependent enterprises and relationships aimed to create and allocate business value. Ecosystems are broad by nature, spanning multiple geographies and industries, including public and private institutions and consumers**."

But hold on! Doesn't that sound like a definition of a traditional market? Yes, it does! Markets are also broad, they can span many different geographical locations and

industries, public and private! And they're not the only similarities! Traditional markets, just like ecosystems, are made up of:




So, what makes the business ecosystem different?

There are three main elements that separate an ecosystem from a traditional market: **mutuality**, **orchestration and value creation**.

## Value creation

Firstly, let's imagine value creation in a traditional market. Participants provide other participants with a service, or product, and are paid for it (we talk about how the participants add value in another chapter).

These transactions can occur across different markets: a company mining a commodity which they sell to a manufacturer represents a market; a manufacturer making a product which they sell to a retailer represents a separate market and a retailer selling a range of products to consumers represents a third market.

**Each market involves several parties operating out of self-interest**.

Let's look at a simple example to illustrate this: say hello to Bob! Bob notices that his town centre is really busy at lunchtime. It's full of shoppers and workers, but there is nowhere to get a good takeaway sandwich! Bob decides to rent a shop, calls it 'Bob's Lunchbox', orders ingredients from some local suppliers and turns those ingredients

into sandwiches to sell to all those hungry people. Bob is making a small profit, well done, Bob!

OK, so that's value creation in a traditional market, **but how do ecosystems differ**?

Another business has started operating in Bob's town! FoodFast is a wholly online business that employs a fleet of cyclists to deliver food in big towns and cities. FoodFast offers restaurants and takeaway outlets, including Bob's, the opportunity to sell their product's to customers far beyond their usual geographic location - in Bob's case, the town centre. The customer can order food via FoodFast's app, or website and a cyclist from FoodFast will collect the order and take it to them.

FoodFast benefits, as without the restaurants they don't have a business, Bob benefits, as he doesn't have to incur all the costs of expansion to reach a wider audience and the customer benefits as they can have a choice of food delivered to their door.

We can see that in this example, a participant, FoodFast, **has created value by providing a new service and collaborating with another participant; Bob. This**, **in turn**, **has created something mutually beneficial for that other participant**.

Creation of a new service isn't the only way that value can be created in an ecosystem, there are a number of other ways, including improving the customer experience, or further developing a product.

## Capturing Value

Of course, it isn't enough for a company to create value, it also has to capture some of the value it creates! There are three ways that a company can do this:

- **Directly** - This means that value is captured through transactions directly, e.g. Bob's customers receive a sandwich from the shop in return for immediate payment.
- **Indirectly** - **An entity would be allocated payments by** a third party, **an orchestrator** (see below) after it had been paid by consumers. E.g. In our example, if a meal was ordered from Bob over the FoodFast app, Bob would be paid for the meal he had provided by FoodFast not the consumer. The consumer would have paid FoodFast and FoodFast would subtract its commission before paying Bob.
- Mix – This is simply a combination of the **two different methods**. Perhaps a gym-goer may pay a monthly subscription to an online company that allows

access to a variety of different companies' gyms, but also pays each gym directly for a class that isn't covered in their subscription.

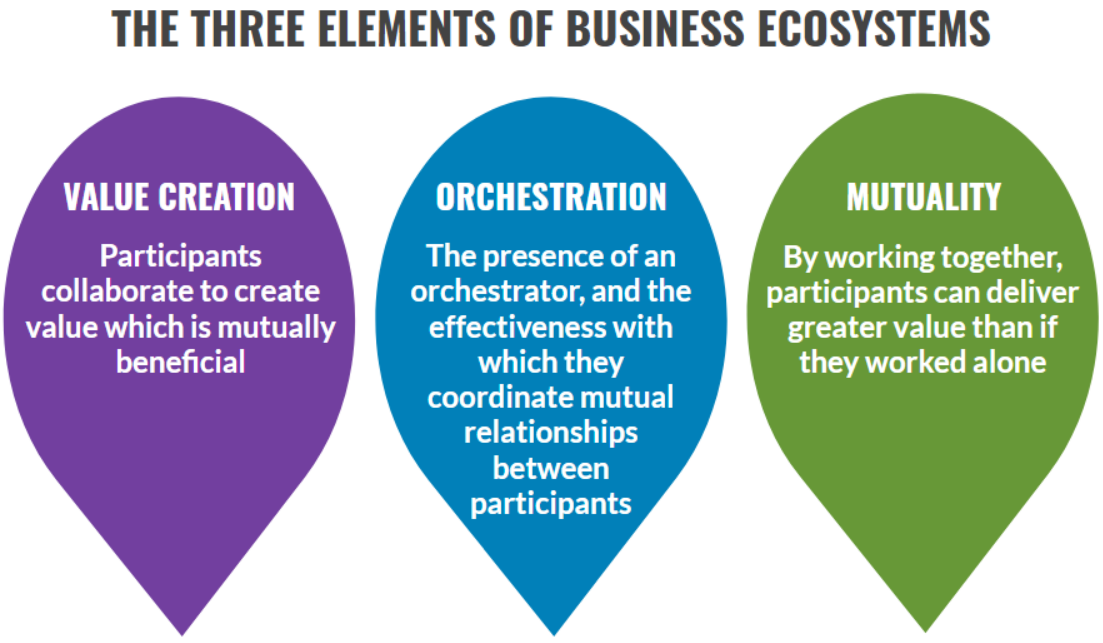
## Orchestration

Returning to the distinctive features of ecosystems we have **orchestration**. We saw in the example above that FoodFast was the orchestrator; it **coordinated the mutual relationships in the ecosystem**. **Orchestration relates to the extent of the orchestrator's influence over the others** within the ecosystem.

For Bob and FoodFast, the orchestration has been enabled through the growth of technology. For example, customers can use the FoodFast app from their homes and order whatever food they want from a number of different outlets. We will look at other ways that these complex relationships can be managed through the growth of technology in a later chapter.

## Mutuality

The characteristic of mutuality links to a couple of points that we've already touched upon when talking about value creation. We saw that FoodFast created a service that mutually benefited both themselves and Bob, as well as others in the ecosystem. The characteristic of mutuality links to this idea of increased levels of coordination, which in turn underpins a major benefit of a business ecosystem, **that by working together the participants of an ecosystem can deliver greater value than if they worked alone**.



# Example of an ecosystem

So before we move on, let's think about who may make up Bob's ecosystem.

| Participants | Relevance in Bob's ecosystem |
|---|---|
| **Suppliers** | The number of suppliers Bob uses will depend on whether he buys from one wholesaler, or independently sources his ingredients from independent producers. |
| **Customers** | The individuals who come into Bob's shop to purchase sandwiches or buy food through the app. |
| **Legislators** | There is tight regulation about the environment in which Bob prepares his food, plus more legislation regarding tax returns. |
| **Competitors** | Not only the competitors in Bob's town but all the different companies and different styles of food on the FoodFast app. |
| **Landlords** | We know that Bob rents his shop, so the landlord will be another participant in his ecosystem. |
| **Software developers** | OK, so Bob himself doesn't employ any software developers, but what about FoodFast? Because customers can access Bob's products through its apps, the software developers are, therefore, part of Bob's ecosystem. |

This is by no means an exhaustive list of the participants that make up Bob's ecosystem (there wouldn't be enough space to include them all) and his is a relatively simple business! Imagine how much the ecosystem will grow if a company operates in many different geographic locations or manufacturers many different complex products from a large variety of raw materials!

# 2. Benefits of an effective ecosystem

So, to recap, in an ecosystem, capital, ideas and talent flow between the participants. **If an ecosystem is performing well, then this flow of capital**, **ideas**, **and talent will move quickly and efficiently throughout the ecosystem**. This is because the participants will have developed ways of working together that streamline these processes.

**These processes help to create value**, think about how the flow of ideas between Bob and FoodFast helps to create value for both participants. FoodFast can offer its customers Bob's sandwiches, and Bob can reach a new market.

It's also much **harder for a competitor to replace a businesses that have been strengthened from a collaborative position within an ecosystem because the competitor can't compete without finding a similar set of partnerships**. Increasing the difficulty for a competitor to enter a new market is also known as raising the barriers to entry and is something we will look at in more detail in this chapter when we look at Porter's Five Forces.

But the advantages don't stop there! Through participants innovatively sharing expertise, skills and knowledge, and working together, they **should be reducing the costs of production** and, as we have seen with Bob and FoodFast, enabling each other **to reach new consumers**.

In summary, the main benefits of being part of an ecosystem include:

- Creating more value for customers
- Raising barriers to entry for potential new competitors
- Reducing production costs
- Reaching new customers

# 3. Participants

We have already noted that the participants in the ecosystems are the interacting organisations and individuals which include, customers, suppliers and competitors. In a traditional market participants would have been known as stakeholders.

**Any parties that have some kind of interest in the business and can either affect, or be affected by, the activities that it undertakes**. The term participant is slightly broader in meaning as participants are anyone connected to an ecosystem. The concept of stakeholders and how important they are to an organisation's strategy will be explored in a later chapter.

Collaboration between these participants is not a new concept, but the difference between participants in an ecosystem and in a traditional market is **the increased significance of the relationships**.

There are three key questions that an organisation should ask with regards to all of the participants that make up the ecosystem.


## What is the role of the participant?

So, if participants are the organisations and individuals that together form an ecosystem, by asking what each of participant's roles are, a business owner/leader

can establish the **exact role the participant is carrying out in the ecosystem with regards to their own business**.

FoodFast contracts self-employed delivery cyclists. Quite simply the cyclist's role is collection and delivery of sandwiches, and by working together, customers quickly receive their food in busy urban areas. In return the cyclists are paid. There are, of course, many participants in FoodFast's ecosystem, from software developers to full time staff, the leader has to be aware of all of their specific roles.

## What is the key value proposition? (Capability)

In the first question, the leader simply understands the role of the participant, this question takes the next step by asking the **value that the participant provides**.

So, what does that mean for our FoodFast participants? Well, the delivery cyclists provide quite a lot of value! If FoodFast didn't employ them, they wouldn't be able to deliver the food to customers. They are especially effective in busy, urban areas where delivery by car would take far longer, customers' food would get cold and they may not use FoodFast's app again!

## What is each participant's reach?

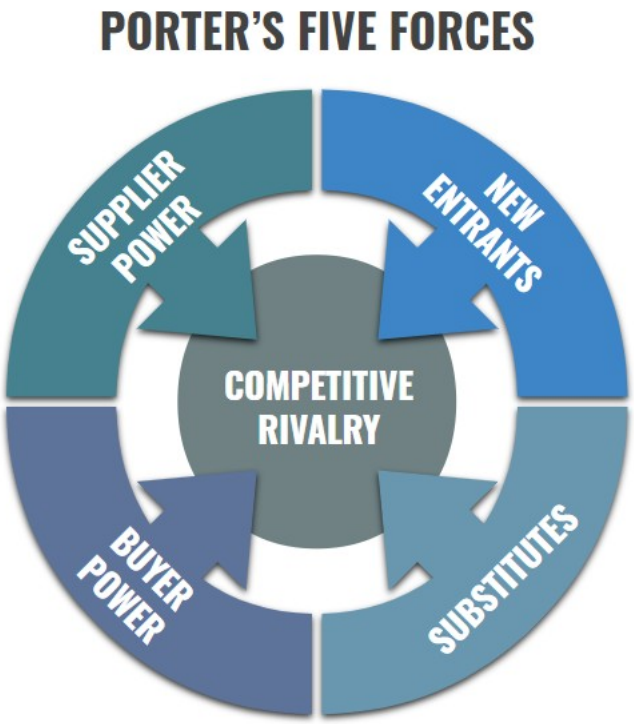
This question is asking whether the participant is able **to scale up its operations**. For example, would the participant be able to move from serving a local market to a national market?

FoodFast's self-employed cyclists would really have no scope to be able to scale up the operations, after all they are just individual people! So what would this mean for FoodFast? Well, it would have to be aware that it would have to employ local cyclists for every urban area it operated in as participants can only cover a small area. Also, what would it mean when FoodFast wants to expand into rural areas? Probably that they would have to look at another delivery system, perhaps local taxi drivers.

# 4. Porter's Five Forces

Before we move on, let's explore how three major participants; competitors, suppliers and customers can impact on a market. To analyse their impact we will use **Porter's five forces model, which can be used**:

- **To understand how profitable an industry is**, which can be used to decide whether to enter or exit the market.
- By firms operating in that industry to **understand the forces impacting industry profitability** and change how they operate to become more profitable themselves.




Each of the forces is analysed to find the size of the force. **If on balance the forces are high, then the industry profitability is low** and the market would not be a good one to enter. **If the forces on balance are low, it is a profitable industry** and a good one to enter.

Let's take a closer look at each of the five forces in turn:

## Competitive rivalry

**This force will be high and the industry less profitable when**:

- There are **a lot of competitors**. For example, in consumer electronics, there are literally hundreds of competing companies who are making the same kind of product (such as a calculator). This means that prices will be low (because everyone is trying to undercut one another!) thus low profitability.

- There is **little difference between the products**. Fruit for example – one market stall may find it difficult to price higher than the one next door for this reason.

- **Competitors are strong.** For example, if they are big, have financial support, and economies of scale, then they have the resources to dominate the market. If there are several competitors this size then it will be difficult to make any money in that market.

- **There are exit barriers to the market.** This means high cost of leaving a market, which keeps competitors in a market they might otherwise leave. More competitors means more competition and less chance of being profitable!

## Threat of new entrants

This relates to **new companies entering the market** that are not currently there. The **force will be high and the industry less profitable when**:

- **New companies can easily enter the market**. For example, the information technology industry has new entrants all the time, with a new 'tech start-up' being born every five minutes (or so it would seem!).

- **New companies are likely to or intend to enter the market**. Again, with the information technology industry, the potential returns on a successful start-up make it a very tempting industry. For example, car sharing app Uber was founded in 2009 and had an estimated value of $62.5 billion in 2015 and transformed the market for taxi cabs driving down profits for traditional firms having to deal with this new competitor.

It is **harder to enter the market when there are significant barriers to entry** (factors which prevent new companies entering the market). These can include:

- **High costs of entry** (e.g. production facilities, IT). A classic example of this would be a shipping company or an oil company. Such industries require

billions in assets and so no company could simply walk in and set up a competitor.

- **Patents.** If a company creates a drug that cures a certain disease (disease X) the company can have that drug patented. This acts as a barrier to entry as no one else can use the company's formula. Therefore, unless there is another way disease X can be cured, the company will have a monopoly on the disease X treatment market. No one else will try to get involved.

- **Customer contracts in place**. For example, home streaming services like Amazon prime and Netflix. They are the market leaders and many people have one or the other. As a result it will be hard for competitors to enter the market, as many potential customers will have a long standing account with an established competitor. Something they are unlikely to just turn their back on.

- **Cost advantages** of existing competitors are significant (e.g. due to scale of operation).

- **Strong brands** amongst competitors. It is always difficult to draw loyal customers away from an established brand and try something new. It is human nature to 'trust what you know.' For example, you trust a friend more than you would a stranger, wouldn't you? Doesn't mean the stranger is bad, you just don't know them. The same principle applies when comparing a new brand to an established one.

## Buyer power

This is **the power that the customers have over the competitors in the industry**. The force is high and industry less profitable when:

- **Customers are large and provide a large proportion of company profits**. For example, if Buyer A makes up 70% of your sales you will be completely dependent on them. If they turn around and say "we want a 20% discount or we'll stop buying from you" you may have to accept it. This may damage profits.

- **Customers can switch between competitors easily**. Bread for example is a basic commodity without too many differences between different brand making it easy a customer to simply put one brand back on the shelf and take a competitor's instead if they think it's too expensive.

## Supplier power

Supplier power is **the power of the suppliers in the industry**. It is high and the industry less profitable when:

- **There are few alternative suppliers**. For example, your company makes chemical Y, a key additive to any soft drink in production. You are the only supplier of chemical Y and all beverage producers have to buy from you. You have significant supplier power in this instance as the beverage producers have no choice but to buy from you if they wish to remain in business, as such, you can change whatever you want.

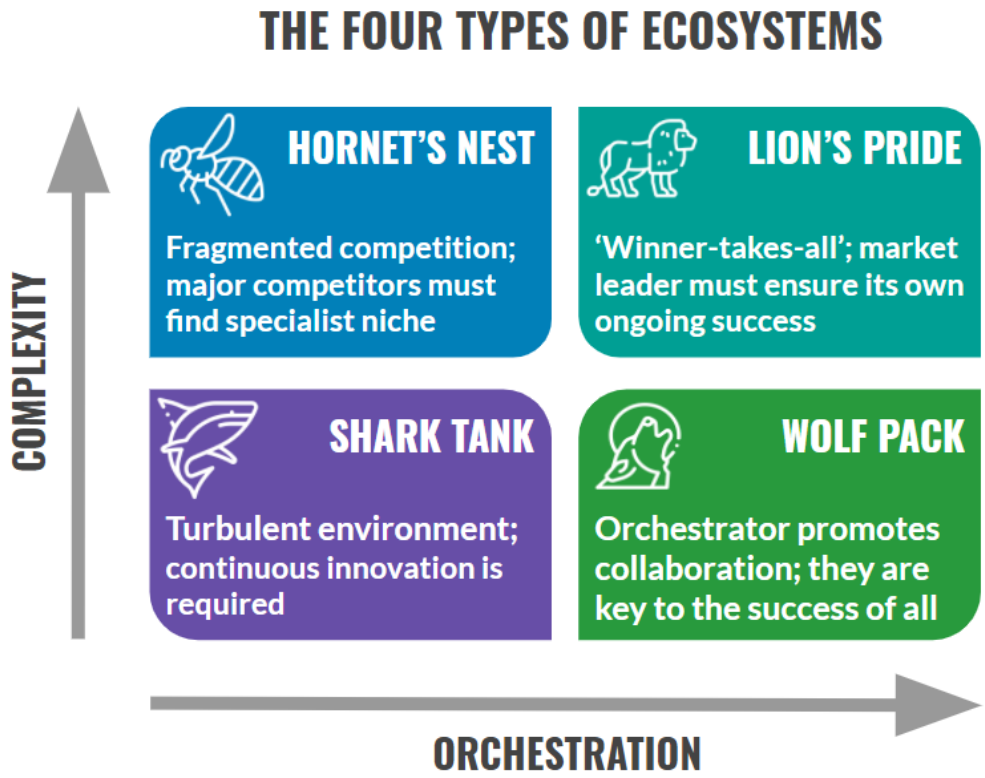
- **Cost of changing suppliers is high**. For example, a mobile phone provider. Often when you get a new mobile phone you are tied into a 24-48 month contract. If you wish to switch you are often required to pay off the amount outstanding, this makes switching expensive and difficult.

## Substitutes

What if your product can easily be replaced with something else? **Substitutes are products to which a customer can easily switch and still have their needs met**. For example, a substitute for cinema might be Netflix, DVDs, the theatre, sport or other forms of entertainment.

Where customers can have their needs met from many different types of product, it becomes easy for them to switch if prices rise, for instance. **This makes profitability in the industry low**.

# 5. Different types of ecosystems




As noted in the diagram there are four different types of ecosystems. These four types are created by two factors: complexity and orchestration.

## Complexity

As the name suggests, this involves looking at the complexity of the ecosystem. **Complexity is defined by the number of participants in an ecosystem, the range of their roles and how they relate with each other**. The **levels of complexity can be broken down into two categories**:

## High complexity

A highly complex environment could be defined by a number of factors, for example:

- An ecosystem containing a **vast range of participants which require a sophisticated central orchestrator** e.g. amazon is the orchestrator of a huge number of buyers, sellers, employees, suppliers and distributors.

- Participants **undertaking sophisticated activities** such as deep sea drilling.

- Businesses that require high start up costs or other **obstacles that restrict entry into the environment**, such as drug manufacturing in which there is a regulatory framework and where drug development is very expensive.

If we think back to what we have just learnt with Porter's Five Forces, **highly complex ecosystems would have high barriers to entry**. These high barriers to entry act as an advantage for participants in a complex ecosystem because their **position in that would be seen to be relatively secure** as it would be very difficult for a new entrant to replace the existing participant because of the complexity factors. Amazon, the drug manufacturer and the deep sea drilling company are all in a secure position due to the complexity of the ecosystem.

## Low complexity

As you may have guessed, this would be the opposite of a high complexity ecosystem! Barriers to entry would be much lower as there wouldn't be such a large range of participants undergoing sophisticated activities that need orchestrating.

However, because of this, **the participant would be vulnerable because its role could be replaced by another relatively easily** as new entrants would find it easier to enter the market.

An example of a low complex industry could be street food. Say hello to Faisal. Faisal is a passionate cook and all his friends agree that he is pretty talented. Faisal decides to resign from his job and buy a food truck selling simple dishes from wherever he parks up. Now the cost of a food truck and the cooking equipment are relatively cheap, so that's no barrier for Faisal to begin. Faisal doesn't have any special relationships with suppliers, but again, that's no problem as he can buy all his ingredients from any supermarket. There are only a few food regulations that he has to abide by and in no time at all he can sell his delicious food directly to the public with practically no advertising costs!

Good news for Faisal, but also good news for anyone else that has the same dream because they too can open up a food truck and easily compete with Faisal. Because of the low complexity of the ecosystem Faisal is vulnerable to other participants, competitors, that want to take his business!

Faisal might increase his barriers to entry by selling from a unique location no-one has the right to, creating delicious food no-one else can copy or developing a unique brand that ensures customers visit his stall above all others. In doing so he has increased the complexity of the niche market he's in.

# Orchestration

In the opening section of this chapter we learnt that the term **orchestration relates to the extent of the orchestrator's influence over the other participants** within the ecosystem. We also learnt that orchestrators can sometimes capture value for the participants. When using this matrix the factor of orchestration is broken up into two types:

## Tight orchestration

In a tight orchestration ecosystem, the **orchestrator would be able to influence the behaviour and actions of participants across the entire ecosystem**.

An example would be the financial services industry which is tightly regulated, and any transactions between participants are governed by strict rules.

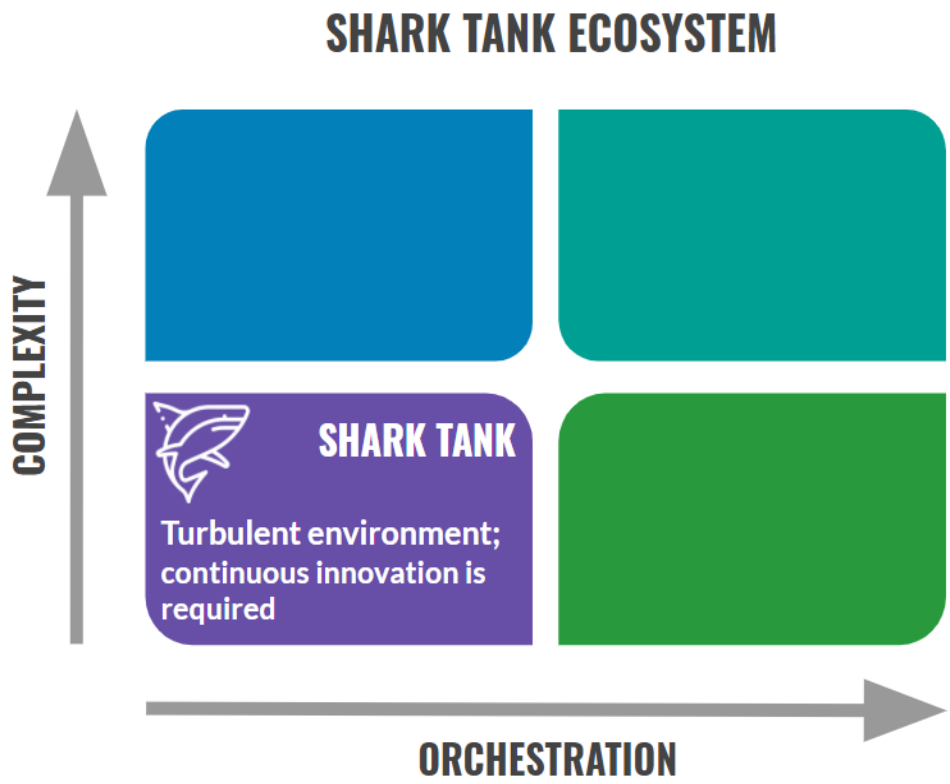
A tight orchestration environment may also mean that the orchestrator is able to capture value for the other participants as we saw with Food Fast and Bob's sandwiches, Food Fast would take payment for Bob's sandwiches ordered by the customer over its website and then distribute the payment to Bob.

## Loose orchestration

In this scenario, **there would be no central coordinator**. This means that participants would be acting more independently of each other and would have to capture all the value themselves as there is no orchestrator to do it for them.

# Types of ecosystems

## Shark Tank




**The shark tank is a type of ecosystem with low complexity and low orchestration**. As there is no strong orchestrator to orchestrate the individual organisations within the ecosystems, the **participants have to create value themselves through innovation** and **must capture value directly** with other participants. So what does 'capture value directly' mean? It means that they must act alone to set up their own operations, working with suppliers, to deliver products that customers value.

An example of this could be £1 retail stores. The premise of them is simple; everything in the store is £1 or less! All the shops sell a wide variety of often branded products. A bargain for the customer!

For the companies though, it is a slightly different matter. Competition is fierce as it is relatively easy for different companies to purchase low priced goods from a huge

range of suppliers around the globe, open up a high street store and become a competitor, **meaning there is low complexity in their ecosystem**.

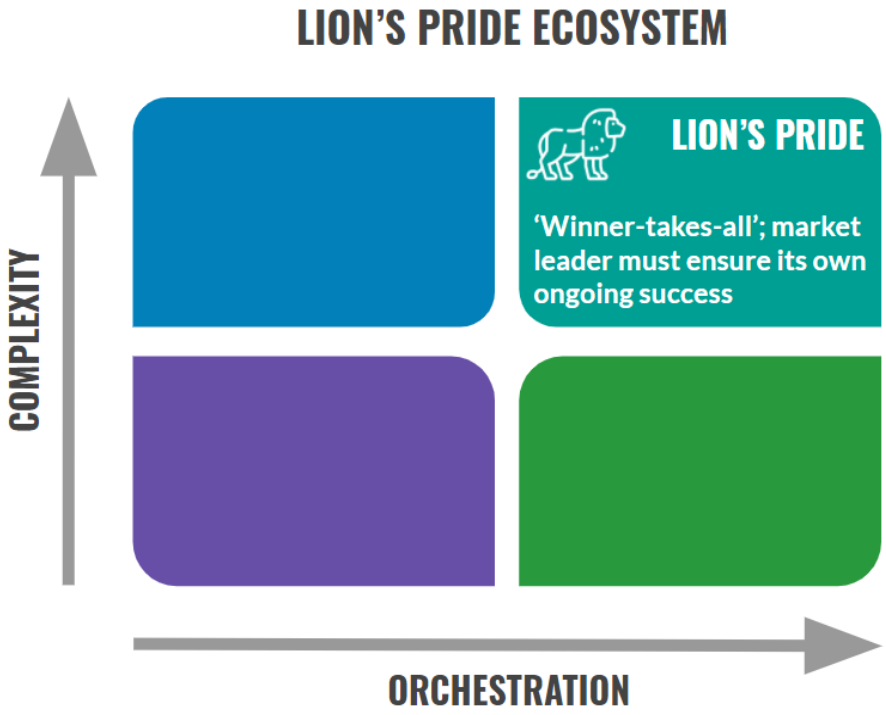
There is also no central coordinator, no one that can affect the actions of the other members of the ecosystem, they have no orchestrator generating custom or payment for them, the £1 stores have to rely solely on innovation. **Innovation can be anything which separates organisations from the competition**. For the £1 shops it could be branding, sourcing unique products or using economies of scale to negotiate discounts other operators can not achieve.

This links closely to the description of this as a shark tank where all the sharks are in the same tank and all are out to eat up everyone around them. Only the strongest survive.

## Lion's Pride

In the lion's pride ecosystem there is high complexity and high orchestration. As we know, in more complex ecosystems participants are seen to be more secure than in low complex environments as the complexity acts as a barrier to entry. And **the high levels of orchestration mean that the orchestrator will facilitate, monitor and remunerate participants' actions within the ecosystem**. The orchestrator needs to ensure they continue to provide a valuable role as technology changes or they could find they lose their position.

An example of a Lion's Pride ecosystem is an online retailer such as Amazon. They are a single coordinator (or orchestrator) of a highly complex web of relationships between suppliers, customers, distributors, IT experts and employees. Because of the relationships that would have to be built up between all participants it would be difficult for other another company to replace them.




In a Lion's pride ecosystem, the 'winner takes all', as one major player dominates the industry, just as Amazon does in the online retail sector or Google does in search engines, but they need to continually be vigilant of changes in the industry that may cause them to lose their position.

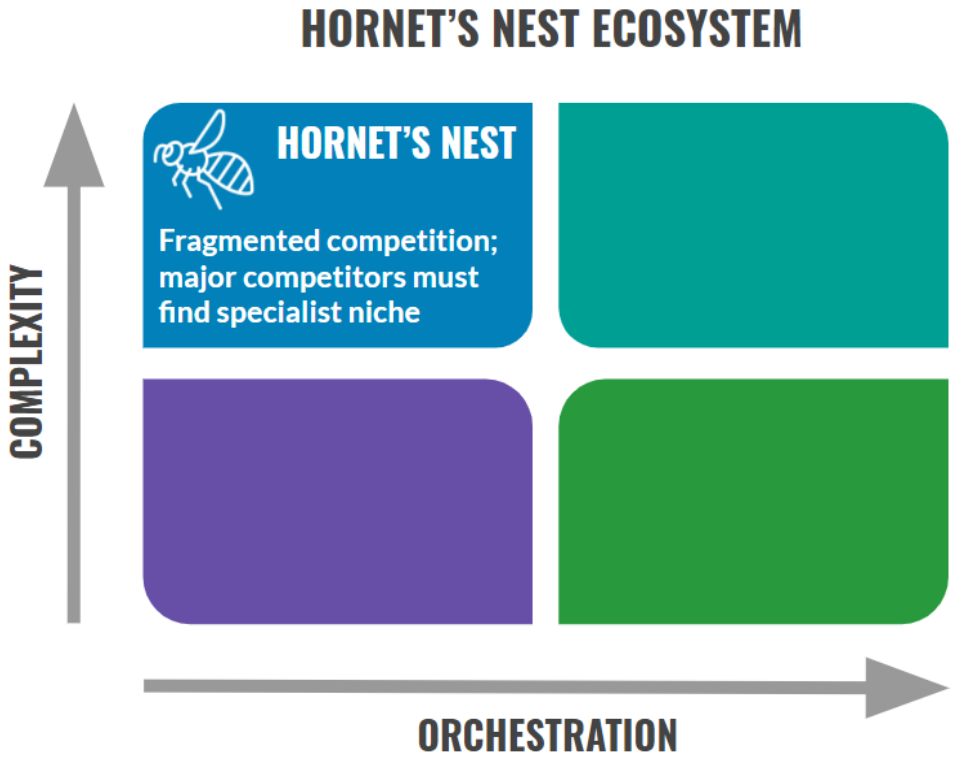
In real life, a lion's pride are a group of animals that are close and work together with a central leader. However the alpha male lion may face challenges from the younger members of the pride, each with the ultimate prize of becoming the leader of the pride themselves if they win the fight. It's a nice analogy for businesses that find themselves in this grouping of the ecosystem model.

## Hornet's Nest

Here, complexity is high, but orchestration is low. Because complexity is high, **new entrants will find it difficult to enter the ecosystem**. In the absence of strong orchestration, **competitors need to find their own way to capture value, ideally in a way that's different from their competitors. This is known as 'fragmented competition**'.

This is like in a real-life nest of hornets where there is no central coordinator, all of the hornets simply work together for the good of each other. And, before you cry that the queen is the coordinator, well, really they're not. They a largely an egg-

laying machine rather than having an orchestration role. And why a hornet and not a bee or an ant? Well if you've ever seen a hornet you'll know they're huge (and terrifying!) and, in our model, this is because the high barriers to entry mean there are a **limited number of competitors who tend to be large**.

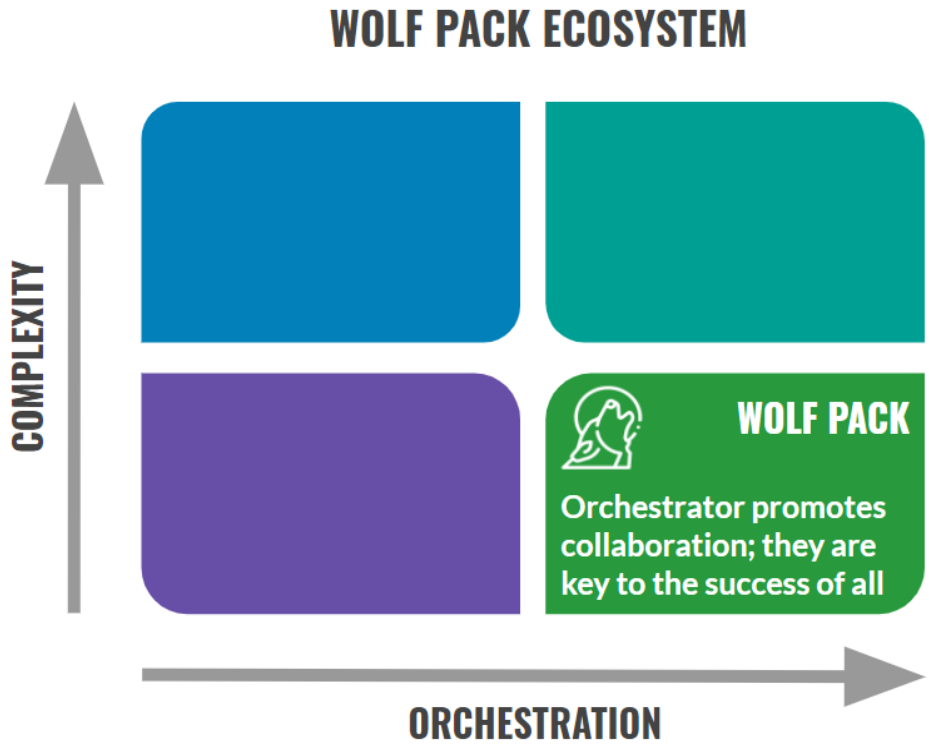



An example of a hornet's nest ecosystem is the video streaming industry. It is a highly complex ecosystem because creating new content or purchasing old content is incredibly expensive and requires technical expertise which creates barriers for entry for new participants. However there are few industry players, in 2019, global companies, such as Disney and Apple, entered the video streaming ecosystem previously dominated by Netflix and Amazon Prime; four hornets in a very competitive nest! In this model, each will need to find its own area of unique space to ensure they survive long term.

## Wolf Pack

The wolf pack ecosystem is characterised by low complexity coupled with high levels of orchestration. Low complexity means this would be an ecosystem that new entrants could easily enter, but the high levels of orchestration suggest that **the ecosystem itself is complicated**.

A real-life wolf pack, while they do have the alpha male and alpha female that lead the pack, all hunt together to bring down prey that can be a lot bigger than them individually, a bison for instance. The key to their success in hunting is collaboration and that's true in the wolf-pack ecosystem too.




An example of a wolf pack ecosystem could be the future of the energy and utilities sector where homes may not only consume energy but produce it, through solar panels or wind turbines. At some points of the day, a home may produce enough excess power to sell on so others can use it. The energy company is simply an orchestrator coordinating the electricity around a network. Ebay might be another example, enabling people to buy and sell goods and services from each other in their online marketplace; Ebay coordinate the large numbers of people who want to sell to each other. In both these examples, it is easy for participants to enter the market as people can put up solar panels or simply sign-up to Ebay to buy or sell items.

## Strategies for each ecosystem

Depending on which environment organisations find themselves the strategies they follow for success will differ.

- A **shark tank** is highly competitive and **competitors need to continue to innovate** to keep ahead of the many new entrants.
- A **lion's pride** has one market leader who must ensure that **the factor that led to their success continues to be relevant in a changing world**.
- In a **hornet's nest**, the small number of **major competitors must find their specialist niche** to they can retain their position as one of the major players.
- In a **wolf pack**, the **orchestrator supports all the participants** to coordinate them to work together for mutual benefit; the role of the orchestrator being key to the success of all.

# Exercise

Which of the following industries or companies would you put into which ecosystem?

1. Large coffee chains (e.g. Starbucks/Costa)
2. Small coffee shops
3. Game consoles (e.g. Sony/Nintendo/Microsoft)
4. Operating systems for laptops and computers (e.g. Microsoft windows)
5. Real estate agencies
6. App marketplaces (e.g. Google Play/Apple store)

## Solution

1. Large coffee chains (e.g. Starbucks/Costa)

   Hornet's nest – As there are small number of large chains each with their own unique brand and atmosphere. There are significant barriers to entry for new competitors; the brand, being in the best locations and the cost.

2. Small coffee shops

   Shark tank – Barriers to entry are low for small, individual coffee shops with no overall company orchestrating their management, and, as such, it is a very competitive market, in the shark tank category.

3. Game consoles (e.g. Sony/Nintendo/Microsoft)

   Hornet's nest – Again a small number of successful competitors, each aiming for their own unique market position.

4. Operating systems for laptops and computers (e.g. Microsoft windows)

   Lion's Pride – One leading market player, looking over their shoulders at small competitors such as Linux to ensure they don't take their place. As the leading player they orchestrate the market which is extremely difficult for new competitors to enter because of the fact that most software is built to be based on the windows system.

5. Real estate agencies

   Shark tank – An easy market to enter where there is a lot of competition.

6. App marketplaces (e.g. Google Play/Apple store)

   Wolf pack – The participants make and sell their own apps, with the app stores taking commission from supporting the buying and selling of their services.

# 6. Regulation of ecosystems

Regulators exist to ensure fair but competitive marketplaces, both for organisations and their customers. For example, in the UK the water and sewerage industry is regulated by OFWAT to ensure consistent supply at a fair price.

However, dynamic, rapidly changing **ecosystems are causing regulators problems**. Let's see why:

- **Ecosystems change quickly.** Just think, Uber, the global ride-sharing business, was only founded in 2009 and now it operates all over the world and has totally disrupted the taxi industry which is often regulated on a city by city basis.

  Because of the speed in which ecosystems change or are created it can be difficult for regulators to keep pace with the change. It wasn't until 2017 that the European Court of Justice actually ruled over what type of company it was, a full five years after it had launched in the EU!

- Ecosystems, by their definition, are difficult to regulate. They contain a multitude of diverse participants interacting and operating in different ways, complicating a regulator's job. In a traditional market environment, it is the regulator's job to make the competitive field as fair as possible. **It will be far harder to set the regulations for diverse, non-comparable entities**. Is it fair, for instance, to compare Uber with a traditional taxi firm? In someways yes (they provide the same outcome), but in other ways not (they might argue that they are just a website connecting independent drivers and customers).

- The complications don't end there, ecosystems are driving **new products and services to be created**.

  Although Uber is similar to a taxi company, it's not actually classed as one. Using apps and personal cars it has redefined transportation and is actually classed as part of the ride-sharing industry, an industry that Uber itself created. As it's a relatively new industry, existing regulators have to ask themselves the question, whose job is it to regulate them? A regulator has to keep up with this innovation, and thanks to the digital revolution, make a judgement between digital and non-digital services and which they regulate and which they do not.

- Lastly, the complication for regulators doesn't end there! **Even when they are able to regulate industries, participants will try to find ways to bypass regulations**.

  For example, transport regulators in New York have capped the number of new drivers ride-sharing companies are allowed to employ, in a bid to protect the existing yellow cab taxi service. However, Uber sued the city in a bid to get the cap lifted, saying that this decision was uncompetitive.

# 7. Digital technology and the ecosystem environment

## The new age of ecosystems

If ecosystems are so beneficial to all of its participants, why did they only start being talked about at the end of the 1990s? Well, a significant reason is that the technology that is needed to create the conditions for ecosystems to thrive didn't previously exist. It is the **invention and development of digital technology**, for example, the Internet, networked systems, social media, big data and the Internet of things that **have allowed ecosystems to flourish**. According to IBM's report 'The New Age of Ecosystems' there are three characteristics of organisations in ecosystems:

### Connected and open

Because of the developments of PCs, laptops, tablets and mobile technology, more people than ever have access to the Internet and so participants of an ecosystem can find it far easier to communicate and collaborate.

For example, before the widespread use of this technology it would have been impossible for Bob's Sandwiches to receive orders from customers of FoodFast!

### Simple and intelligent

Developments in technology mean that not only is technology getting simpler to use, organisations can utilise it to simply and easily collect and analyse data with which they can use to make informed and intelligent decisions.

For example, FoodFast would be able to collect real time data to show which restaurants were popular in a particular location and use that information to partner with similar restaurants in different locations.

### Fast and scalable

Using technology, the number of transactions an organisation can undertake has increased, as well as the speed in which they can undertake them. Being 'scalable' means that the size of the system can be quickly increased. So, for example, a company using cloud-based storage can simply sign-up to an enhanced package

with their provider as and when their storage needs increase; they do not need to buy new servers or hard-drives and connect those into its system.

Just imagine that 100 customers suddenly wanted a sandwich from Bob, there would be quite a queue out of his restaurant! But 100 customers could easily place an order for Bob through FoodFast's website because technology enables transactions to be undertaken far quicker.

## Drivers of the digital world

OK, we've just seen three characteristics of ecosystem organisations and we've seen how have been enabled by technology, and, just as we saw with the number of transactions FoodFast can handle compared with Bob, these characteristics allow them to flourish in the digital world. But what are the drivers behind the digital world?

- **More people now use the Internet** and that number is expected to grow! One reason for this growth is that many people from emerging markets (partly driven by rising standards of living and lower costs) are subscribing to smartphone contracts.

- The **number of connections is also increasing**. In 2009 there were 2.5 billion devices that could connect to the Internet, by 2020 that number is expected to have risen to 30 billion devices. This enables far more data to be collected, which **will aid real-time customisation for consumers**.

- **Data analytics is the science of analysing raw data**. Because of the growth of things such as e-commerce platforms and social media platforms, data analytics will also evolve to keep pace with all this new data. This links back to the characteristic of 'simple and intelligent' we've just looked at, more and more data is being collected in many different areas of a business' operations which mean that decision making in all these areas can be informed by data.

- **People will also be able interact with machines** in new ways so that tasks will be able to be carried out more quickly and efficiently. For example, some Amazon staff work alongside robots at their fulfilment centres. They bring the shelves and products to the human employees rather than the employees having to search for the products physically. This means that Amazon can function with smaller staff numbers whilst operating more efficiently.

- The middle class is growing all over the world, which means people will be **able to afford digital technology and to get connected**. This in turn means

that more people will be spending online. Not just good news for companies like FoodFast but also Bob, as he can now also sell in the digital world through the collaboration with FoodFast.

- **Globally more people are living in urban areas**. This means that new innovative distribution and delivery systems can be used. For example, in some city-based locations the Internet retailer Amazon offers same-day delivery, this is currently impossible in less populated areas. This means that online companies that have no physical space such as a shop are able to easily deliver to customers.

# Drivers of consumer change in the digital age

As the world changes, so customer requirements change, and the digital era has changed customer needs. The drivers of these changes include:

## Contextualised interactions

Digital consumers expect a **personalised interaction**, such as when Amazon recommends a book you may like based on your purchase history, or **personalised products**, such as a consumer being able to design and order trainers on the Nike store.

## Connected digital systems

Digital consumers are now used to being able to buy something, pay for it easily and have it delivered either the same day or next day. As such organisations have to be aware that they need to **connect their digital systems in order to attract and keep hold of customers**.

## Real-time

Digital consumers expect to be able to **access product information or services 24 hours a day** over the Internet.

## Service

Digital consumers are **willing to switch providers due to poor service**.

In addition, not only do consumers expect good service, but **they are prepared to self-serve**. This attitude towards self-serving can be reflected in consumers being

prepared to personalise their products right through to being provided with FAQ information to resolve their own technical issues.

### Transparency

Transparency is linked to digital consumers expecting to **access product or service information easily before they make a purchase**. It is also linked to information that companies provide about **how they are going to use the consumers data** which they expect to be kept safe.

### Peer reviews

Peer reviews can be more **highly valued by digital consumers** than professional reviews of products in the media or those provided by the companies themselves. Companies should be warned that poor peer reviews carry twice as much influence as positive reviews, and so companies should be quick to respond to any negative feedback online.

## How can companies improve the customer experience?

### Design thinking

Design thinking encourages organisations to **design for the individual they are creating the product or service for**. It involves taking a close interest in the people for whom products or services are being designed for by asking a set of in-depth question about their behaviours and needs.

### Prototyping

Prototyping is the **development of a prototype product in the early stages of a product's development**.

This may mean that the product may not be totally finished, but what it does allow for is the company to be able to monitor how consumers interact with it, and then be able to make any changes if necessary before the product goes to market.

## Experiential pilots

Experiential pilots are used to **analyse the behaviour of consumers and how they interact with an organisation's product or service to help design new products**.

They ask a number of questions to gauge the consumer's engagement: How are they interacting with the product or service? How are the customers interacting with each other and how are they influencing each other? Are any new behaviours being created because of the consumer experience?

## Brand atomisation

By thinking about how its products can be designed, brands can allow some areas of its products to be more widely distributed in a variety of different platforms, for instance sales being able to be made both on a website and directly from facebook.

In another example, the music streaming service Spotify allows its service to be used on a wide variety of mediums from mobile phones to Smart TVs to in-car systems.