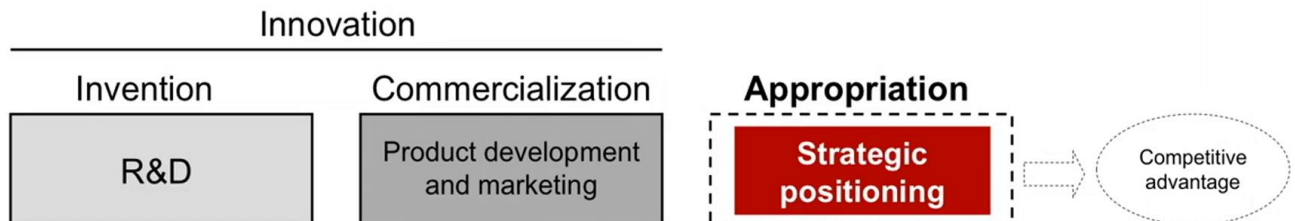




- Innovation is the use of new knowledge to offer new products, processes or services
- It involves **invention** and **commercialization** (and **appropriation**)



Source: Afuah, *Strategic Innovation*, 2009

Launching New Ventures

OK, welcome back! This is segment 5.2 on *Capturing Value*. Now, what we've done so far in this module is we've talked a lot about intellectual property protection. And here we're going to take it one step further and talk about how companies can make money from their inventions. Let's start with some definitions. First, what is innovation? Innovation is the use of new knowledge to provide new products, services, or processes. And it involves invention, commercialization, and appropriation. Let's talk about those. If you look at this graphic: invention is usually thought of as being the research and development, the first initial ideas for a new product, process, or service. Commercialization is product development and bringing the product to market. And, finally, appropriation, or *appropriability*, is about getting money and capturing value from the invention in the marketplace. We're going to focus a lot on appropriation in this segment.

Notes

Summary



0m 05s

## Capturing Value

Launching New Ventures: Entrepreneurship & Strategy for Technology-Driven Startups

Prof. Chris Tucci and Prof. Marc Gruber

Appropriation, or appropriability is intimately bound up with the idea of *imitability*. Imitability is the ability of someone else to copy the invention of the entrepreneur. And it's related to appropriability in the following way: when it's easy to copy something, therefore imitability is high; it's much more difficult for the inventor to make money in general to capture value. And when it is difficult to copy that means imitability is low. Then it is easier for the entrepreneur to capture value from his or her invention. Most people think that imitability is driven primarily by intellectual property protection. And that may be true. However, there are many cases where intellectual property protection is not the key driver of imitability. For example, it could be difficult to copy an invention even if there's little or no IP protection on that product or service. That can be done through many different ways including complexity; where is not obvious how the product is actually put together or what's happening behind the product. It could be tacit knowledge, where the entrepreneur has specific knowledge that is difficult to codify and transmit and can only be learned on the job.

Notes

Summary



- **Imitability** refers to how easy it is to copy a firm's products or services
- It heavily influences **appropriability**, because the easier it is to copy something, the lower the chances that the inventor can appropriate benefits from it



- Imitability ranges from high (easy to copy) to low
- Most of our thinking about imitability is based on IP protection, although this is not the only mechanism for reducing imitability

Launching New Ventures

That could be also difficult to copy. And, finally, if there's a lot of process innovations behind the production of the product or service. Process innovations are usually very, very difficult to observe and, therefore, difficult to copy the end product.

Notes

Summary



3m 04s



OK, let's talk about *complementary assets*. The first thing we want to know is: what is a complementary asset? A complementary asset is everything that's required to commercialize an invention aside from the technology itself. So what are examples of complementary assets? You could imagine your sales and distribution, your manufacturing of a product, the marketing of a product, and everything else that you can do to bring your product to market aside from developing a project or a technology itself. Imagine that you are part of a supply chain. You may order raw materials from some partner. You may do some operations on that to produce a product. You need someone to go off and sell the product. And then you may need to distribute the product to the people who bought it. All of those points, aside from the product itself, you might need access to some complementary asset. Now, the question is: is the the same as a complementary good? And the answer is: no, this is not the same as a complementary good. A complementary good is like a shoe and shoe lace, you know. When the price of shoes goes up, the demand for shoe laces drops. The two products are used simultaneously with each other and they're complements to each other.

Notes

Summary



0m 05s



So that's a complementary good. What we're talking about here is a complementary asset, which is access to some source that you need to commercialize your invention. The question often arises: when do I need to think about complementary assets? And the way that we usually think about this is to treat each complementary asset one at a time and to examine it and say, "Is it relevant to me?" "Do I need to care about this particular one?" And to do that, we're going to develop a little framework to think about whether you should care about each complementary asset. I'm proposing that the way to think about whether a complementary asset is relevant to you is to think about it along two different dimensions. The first is: is the asset important or not? The second one is: if it's important, who controls the asset? Is it in competitive supply, in other words freely available? Or is it tightly held by only one or two parties? So if you look at this graphic, what you see are four quadrants that are based on the combinations of these things. So the lower-right corner, for example, is you have an important complementary asset, but the complementary asset itself is freely available.

Notes

Summary



0m 07s



Let's say you've developed a basic watch. It's nothing fancy and it builds on standardized components that you'd find in other watches. Now, you may ask yourself whether you should care about the manufacturing of that watch. Is manufacturing an important complementary asset? And I think the answer here is yes. You need access to manufacturers to be able to commercialize your watch. However, I would also propose that it is freely available. There are many manufacturers out there who would love to have your business. And I think with a few phone calls you could already have several offers on the table within a few hours. So, therefore, we see that this is going to be in the lower right quadrant where the complementary asset is important however it is in competitive supply, or freely available. Now, imagine instead of a basic watch that you had invented a software program. You may ask yourself whether manufacturing is a key complementary asset for your software product. And here I think most people would say that a manufacturing facility is probably not too important for a software program. So we see ourselves here in the lower-left corner which is the complementary asset itself is unimportant even if it is freely available in the market.

Notes

Summary



0m 09s



Now let's consider a different case where you have developed a software app for a phone. And now you're wondering whether you should care about the App Store, which is the distribution network for your app. I think here we could agree the App Store, or a similar store like it like the Google Play store, would be critically important for the distribution of your app. And, therefore, to commercialize your product, you're going to need access to that App Store. But, unfortunately for you, the App Store is held and controlled by one company. And if you're thinking about other phones, in general, the distribution to these phones is held by a very small number of companies. So there we find ourselves in the upper-right quadrant which is where the complementary asset is important and it's tightly held. And that means the owner of the App Store, in this particular case Apple, would be controlling a lot of the negotiation and controlling the terms of the deal of your revenue-sharing agreement. Furthermore, the controller of the complementary asset can decide whether or not to even accept you into the App Store or not. Now, finally, let's say you've come up with, instead of an app for a phone, you've come up with a fancy new case for a phone, something like this.

Notes

Summary



0m 11s



# Importance vs. Control

Control	Tightly held	IPHONE CASE APP STORE	IPHONE APP APP STORE
	Freely available	SOFTWARE MANUFACTURING	BASIC WATCH MANUFACTURING
		No	Yes
		Important?	

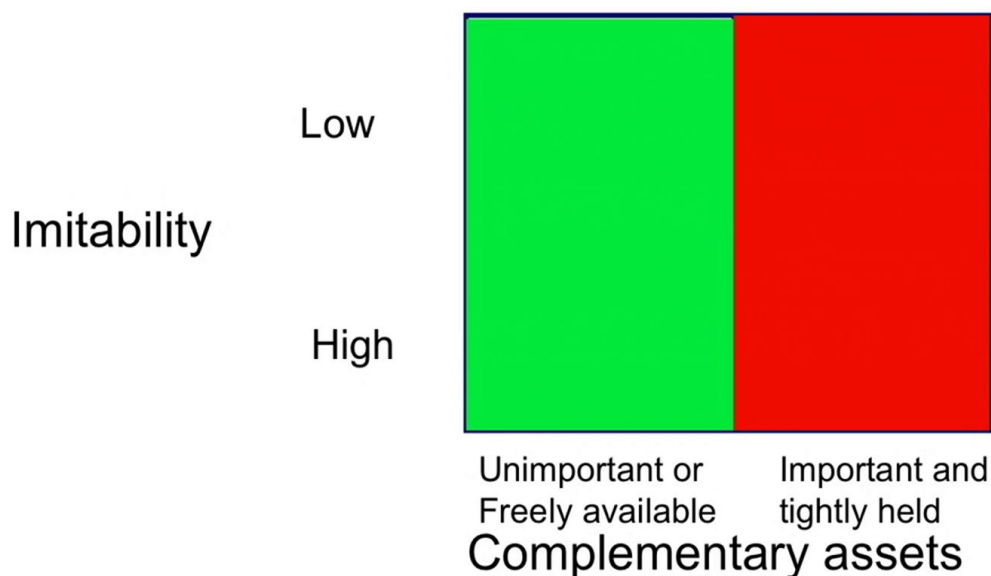
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Now, this particular case could be made of a new material or have some other properties that are desirable. So there let's consider the case for the phone, and let's consider the App Store as a distribution channel. Now, in this particular case, I think most people would agree that the App Store is not really that important as a distribution channel. Even if it's tightly held by Apple, it doesn't really affect the distribution of phone cases. That would be a completely different distribution channel. And so the App Store here is unimportant to you as the entrepreneur.

Notes

Summary





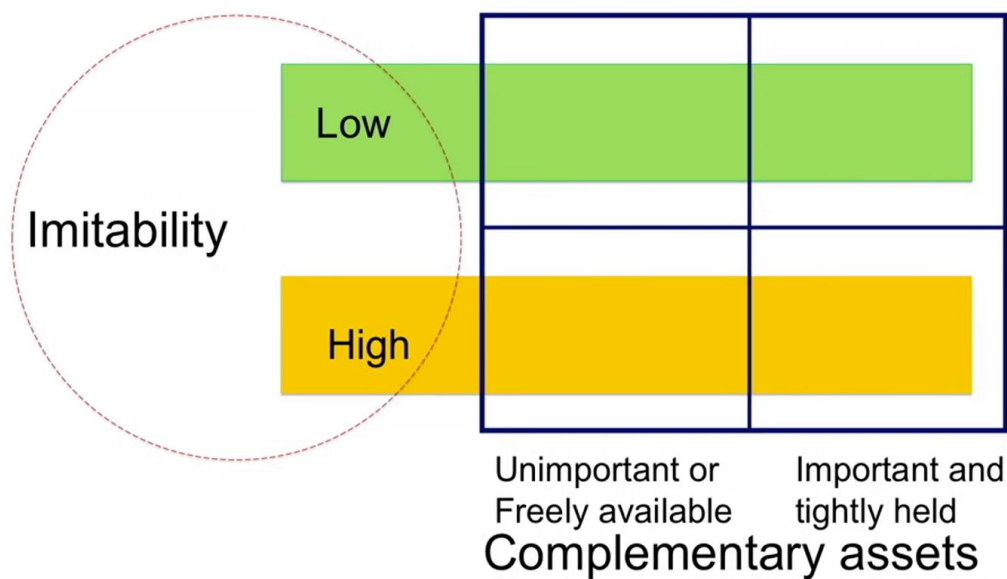
So, as you can see, there are only two categories of outcomes here. And only one of which the entrepreneur really cares about. I've broken that into two colors here: the red zone and the green zone. The red zone is the case where the complementary asset is both tightly held and important to the entrepreneur. And the other three cases, we put that in the green zone because that's not very much of an issue for the entrepreneur. Either the complementary asset is unimportant, in which case we're done, or it's freely available, in which case it's in competitive supply and we can negotiate with lots of suppliers to give us a good offer. So we're tending to capture value from our invention. Moving along to the next graphic, what I've done is I've taken the red zone and put that on the right-hand side. That's the zone where the complementary asset is both important and tightly held. And on the left-hand side of this table is the green zone. The green zone is where it's either unimportant or it's freely available. Those are equivalent in the eyes of the entrepreneur.

Notes

Summary



10m 00s

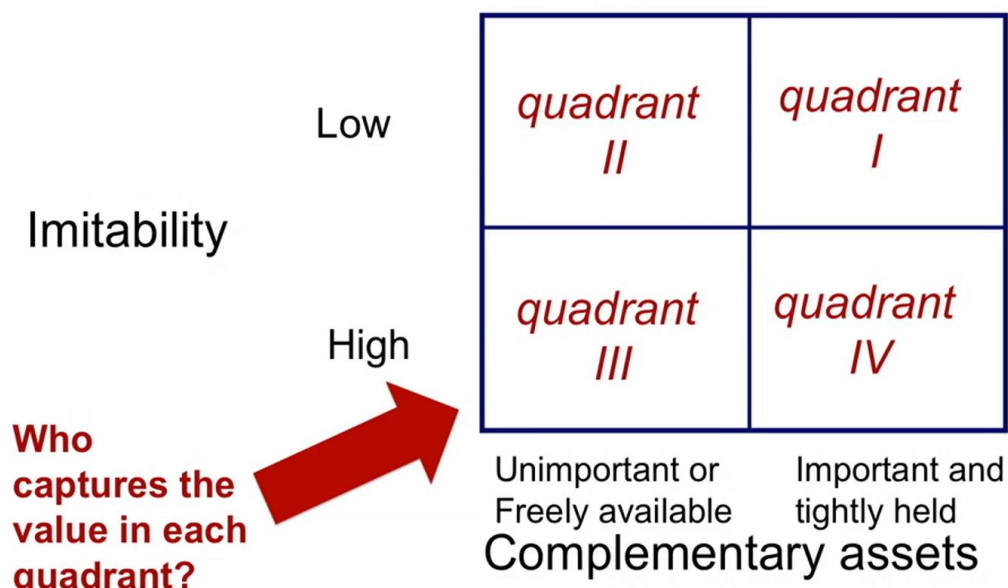


And then, on the left-hand side, what we have is we go back to the imitability table, and we can differentiate between things that are difficult to copy, that's *low imitability*, or things that are very easy to copy, that's *high imitability*.

Notes

Summary





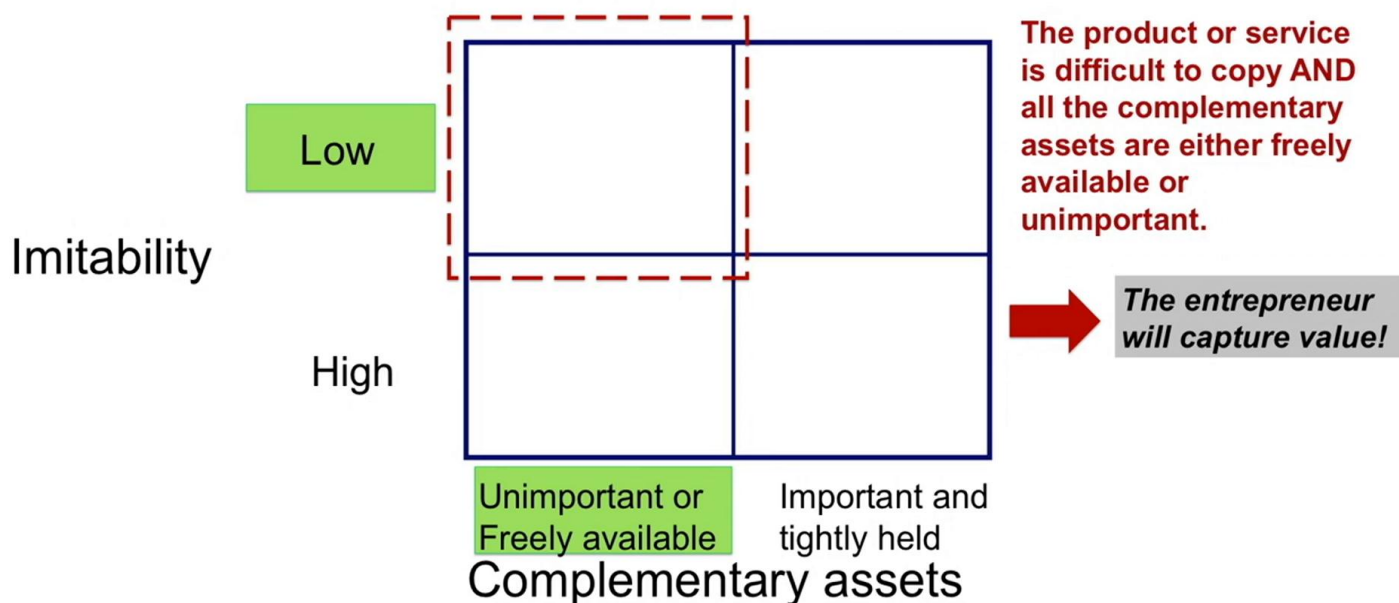
And now what we're going to look at here is who captures the value from the invention in each of these quadrants? And it's not the same. Let's look at the upper-left quadrant.

Notes

Summary



11m 30s



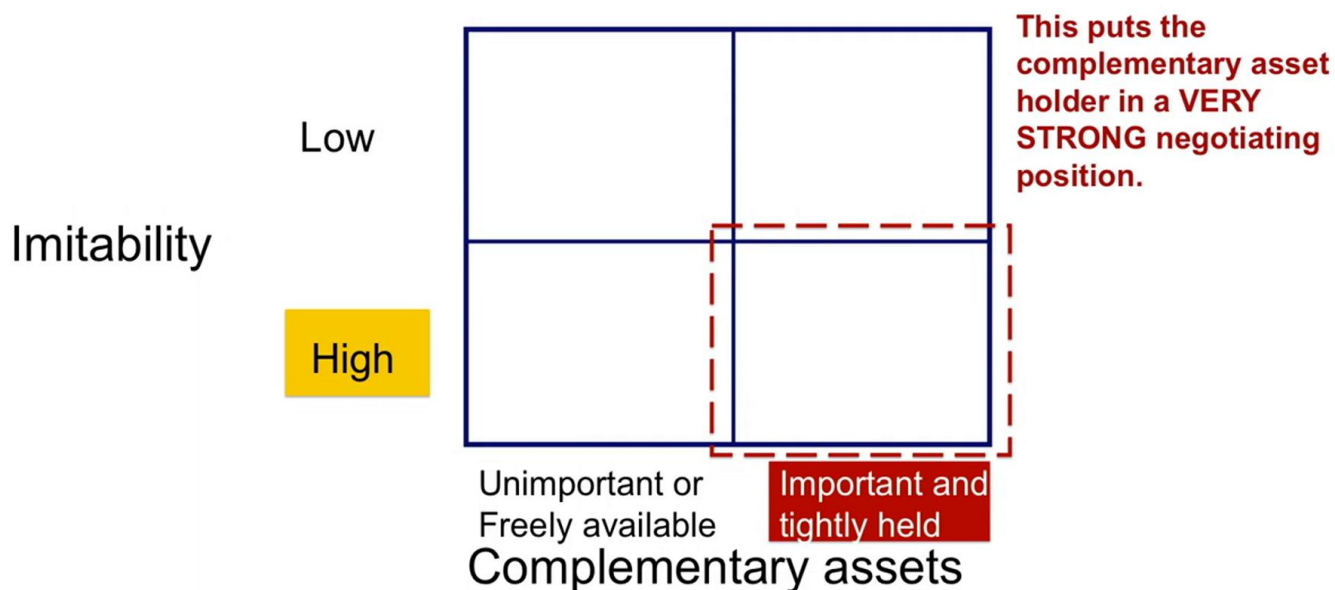
The upper-left quadrant, here, is the case where the complementary assets are unimportant or freely available, and imitability is low. So here's the case where the entrepreneur has a product or service that's difficult to copy, and all the complementary assets are either freely available or they're unimportant. In this particular case, the entrepreneur or the inventor is going to capture value from the invention. The opposite case is the lower-right quadrant.

Notes

Summary



11m 44s



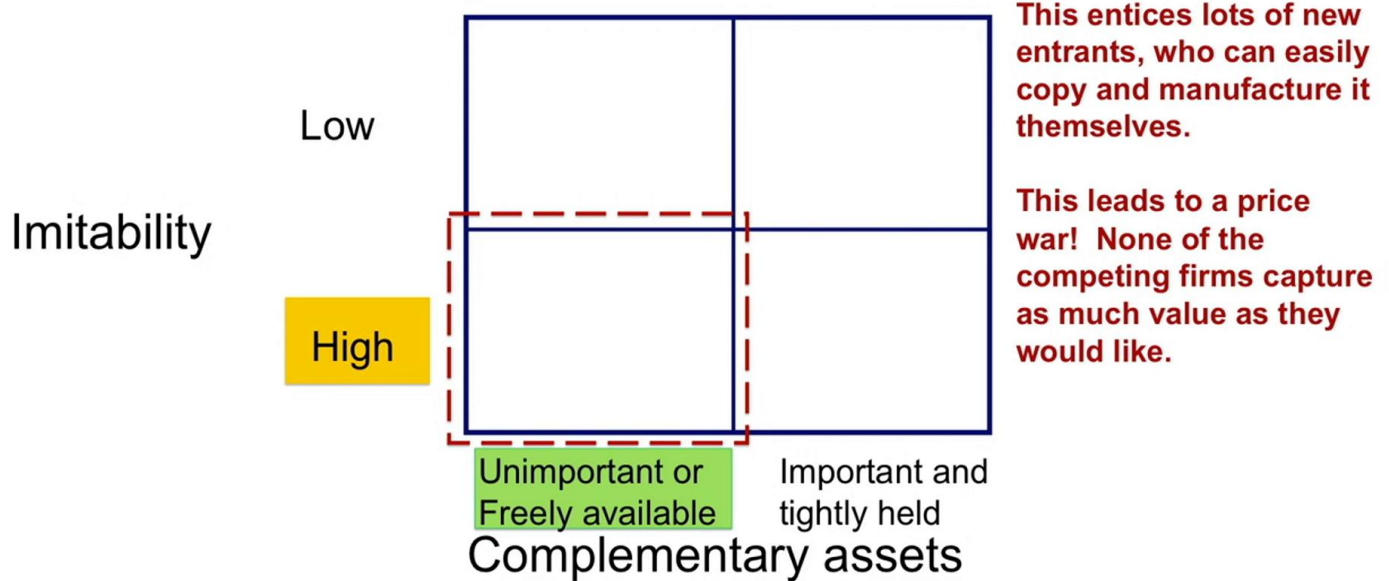
That's the case where the complementary asset is important and tightly held and, unfortunately for the entrepreneur, it's easy to copy the product or service. Now there, as you can see, the complementary asset holder is going to be in a very strong negotiating position. Why? Because the complementary asset holder can simply copy the invention and commercialize it itself. Let's look at the lower-left corner.

Notes

Summary



12m 18s



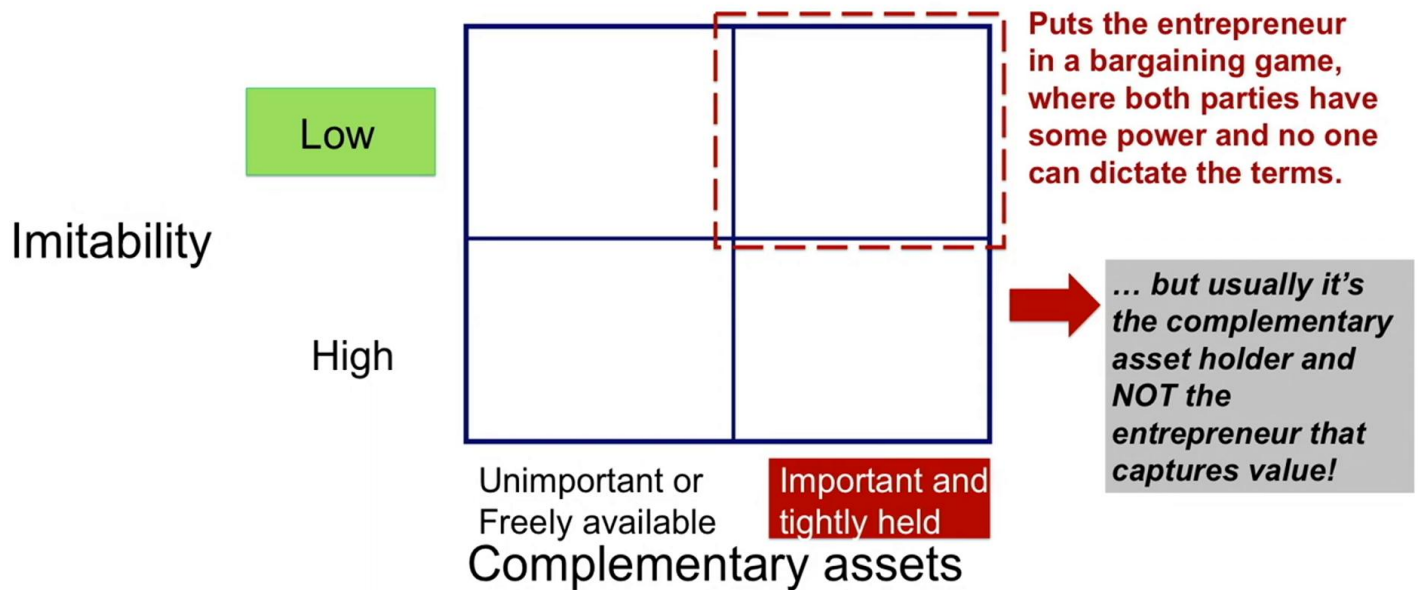
That's the case where it is easy to copy the invention and at the same time, either the complementary assets are unimportant or they're freely available. In this particular case, what you'd expect to see is lots of entry. People will copy the invention as soon as they see it, they'll commercialize it, and there will be many products in the market that are highly similar. In this particular case, you'd expect to have a price war which means that none of the companies here are going to benefit or capture value. And, instead, it will be the customers, or the end-users, that will benefit by having a much lower price in the market.

Notes

Summary



12m 50s



And then, finally, let's look at the upper-right quadrant. In the upper-right quadrant you have a tightly held, important complementary asset, and you've also got a product from the entrepreneur that is difficult to copy. This puts us into a negotiating, bargaining game situation where both parties have some power and no one can dictate the terms. And in this particular case you might ask yourself, "Well, which party is really going to capture the most value?" And it's difficult to state here, but empirically speaking, most of the time it's also the complementary asset holder and not the entrepreneur that captures the value, usually because the entrepreneur is smaller and wants access to the network or to the asset that the complementary asset holder has and, therefore, has slightly less bargaining power even if the complementary asset holder can't copy the entrepreneur's product.

Notes

Summary



13m 32s





So what we just said I've summarized here in this graphic. And what you might want to know is: If I can't capture value, am I doomed? Do I have a bad idea? And there are several different answers to this question. The first is, in terms of the opportunity recognition, if you recall from the prior modules: from the point of view of opportunity identification the entrepreneur has some choice as to which quadrant he or she is going to end up in. For example, the entrepreneur could choose a product or service where complementary assets are freely available. Or it could be that they invented a new distribution mechanism. If you think of the case of Dell computer that went directly to sales over the phone and finally the internet, that was an interesting innovation in the sense that it bypassed the retail channel completely which was normal in the hardware business. So it's not to say, "If you're in the hardware business, you're doomed to go through a retailer and retailers are powerful, etc." You may be able to come up with your own distribution channel which then bypasses the complementary asset that you need.

Notes

Summary



0m 21s

Imitability	Low	Inventor "wins"	Bargaining Game (usually CA- Holder)
	High	Customers "win"	CA-holder "wins"
		Unimportant or Freely available	Important and tightly held
Complementary assets			

## If I can't capture value, am I doomed?

- Opportunity identification means you choose the quadrant you enter
- You can operate in various quadrants, but each requires a different strategy

Adapted from Teece (1986); Henderson (1993)

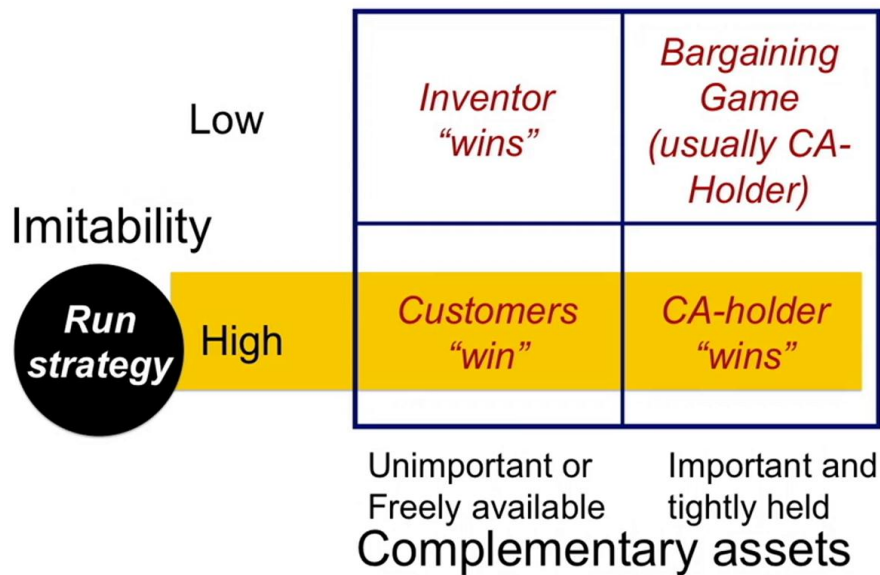
So first of all, in terms of opportunity assessment and recognition, exploitation, the entrepreneur isn't fully constrained by the different quadrants here. And second of all, even if you are in a quadrant that is not very advantageous, in other words anything but the upper-left quadrant here, you're still not doomed. It's just that different strategies apply to these different quadrants. So for the upper-left quadrant, that's very clear. You're very difficult to copy, you've got strong intellectual property protection, or maybe you've got complexity going in your favor, and therefore, you can expect to release the product to market, capture value, and recoup your investment taking your time to come up with your next product or service. However, in the other quadrants you may be forced or it may be desirable to come up with a quicker response into the market, especially the lower row here where it's easy to copy.

Notes

Summary



15m 44s



## If I can't capture value, am I doomed?

- Opportunity identification means you choose the quadrant you enter
- You can operate in various quadrants, but each requires a different strategy

Adapted from Teece (1986); Henderson (1993)

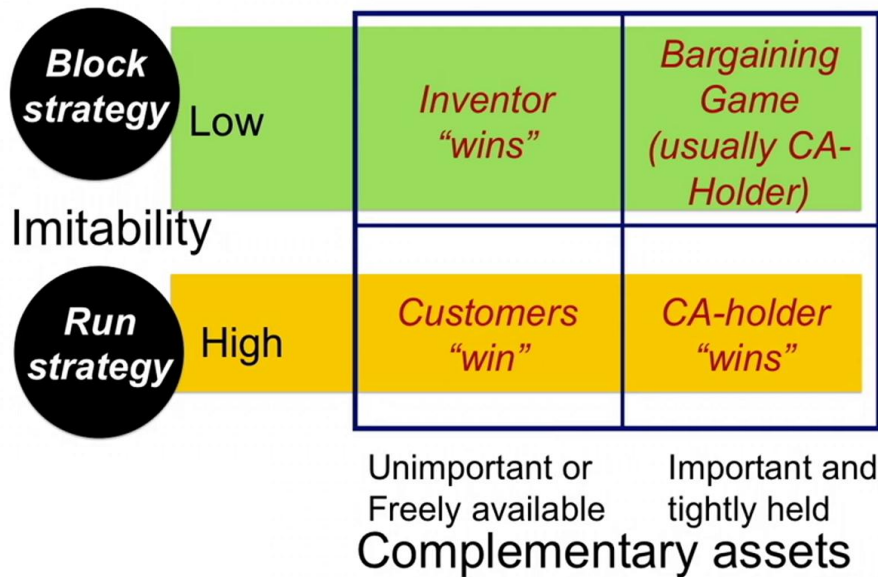
If it's easy to copy your invention, then when you get it to market, you will make money at first, you will capture some value. But in the long run, or the medium run, you won't be able to capture much value because other people are going to see you, copy you, and enter. Therefore, you need to come up with a plan to make a continuous stream of new products once the first one's in the market. So this is more what you call the *Run strategy* versus the *Block strategy*.

Notes

Summary



16m 46s



## If I can't capture value, am I doomed?

- Opportunity identification means you choose the quadrant you enter
- You can operate in various quadrants, but each requires a different strategy

Adapted from Teece (1986); Henderson (1993)

The Block strategy is: you just release the product to market, you capture value because it's difficult to copy, and you can, more or less, milk your products, as we say. On the other hand, the Run strategy is where you release the product to market and then you continue to commercialize new products in a continuous stream that enables you to make money for short periods of time before you move on to the next thing.

Notes

Summary



17m 12s

Imitability	Low	<i>Inventor "wins"</i>	<i>Bargaining Game (usually CA- Holder)</i>
	High	<i>Customers "win"</i>	<i>CA-holder "wins"</i>
		Unimportant or Freely available	Important and tightly held

Complementary assets

## Alliances

- Consider the trade-offs
- It's **not** guaranteed that having alliance partners will be:
  - profitable
  - a good idea
- It could end up being very expensive!

Adapted from Teece (1986); Henderson (1993)

Now, one final note here about alliances and the role of alliances. I often hear from entrepreneurs, they say, "Oh, I've got a great business. It's built on alliances. Alliances are so great." I think if you look at this framework here, you can understand why alliances may or may not be so great, right? If your alliance is with your complementary asset holder, and it's tightly held and important, then the complementary asset holder, in other words your alliance partner, is going to charge you a lot to gain access to that asset. Therefore, it's not necessarily a guarantee that having a bunch of alliance partners is going to be either very profitable or a very good idea. If the alliance partner is going to dictate the terms, then it could end up being a very expensive proposition.

Notes

Summary



17m 40s



- Appropriability
- Imitability
- Complementary assets
- Combinations of complementary assets
- Commercialization strategies
- Opportunity assessment and exploitation plans lead you to activity in certain quadrants

Launching New Ventures

So, to summarize what we've covered today in this segment on capturing value: we started by discussing appropriability, or the ability for the entrepreneur to capture value. We then moved on to a discussion of imitability, or how difficult or easy is it to copy the entrepreneur's invention. Then we talked about complementary assets and we drew a distinction between the cases where the complementary asset was important and tightly held versus freely available or unimportant. Then we looked at these different combinations of these factors to determine that one of the nicest places for the entrepreneur to be is the case where it's difficult to copy and complementary assets are either freely available or unimportant. And probably the most difficult place to be is the case where it is easy to copy and the complementary asset holder is tightly holding on to access to an important complementary asset. And there are different strategies for dealing with the situation that you're in; how quickly you should commercialize and release new products. And we also talked about the opportunity assessment and exploitation plan that might lead you to one quadrant or another so that you can have a more successful venture that captures a lot of value. Thanks a lot, we'll see you next time.

Notes

Summary



18m 38s