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MAKING THE SHIFT FROM DISRUPTIVE TO HYPER SCALABLE

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How do you adopt Hyper Scalability to change your company for the future?

In this chapter I explore the limits of the disruptive innovation philosophy and highlight why future success requires companies to adopt Hyper Scalable thinking to succeed in winner-takes-all markets.



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MAN CANNOT LIVE BY DISRUPTION ALONE

Disruptive innovation is a concept pioneered by Harvard Business School professor Clayton Christensen. Unlike his famous predecessor Michael Porter who was interested in the success of companies, Christensen focuses on why businesses fail. In his bestseller *The Innovator's Dilemma* Christensen describes why big companies tend to focus on incremental rather than disruptive innovation, finding that pursuit of the latter would undermine short term profitability. His book is a distant echo of the **creative destruction** concept formulated in 1942 by the influential economist Joseph Schumpeter. Christensen argues that every business must be disruptive or will get disrupted. Disruption became the mantra of Silicon Valley where entrepreneurs are busy launching the next killer app.



TIME FOR A NEW REVOLUTION?

The industrial revolution that started some 250 years ago gave birth to new manufacturing processes - shifting handcrafted products to mass-production by automating and replacing manual labor with machines. Historically, it started in the United Kingdom, reaching its latest high in China, transforming the nation into a manufacturing powerhouse. For companies that create physical goods, industrialization had traditionally been pretty much the only way to scale their business. After all, ever-smarter machines can produce non-stop while requiring fewer and fewer human operators to keep them running. However, we are reaching a critical juncture and industrialization as a process to scale companies may have reached its limits. Machines require raw materials and energy to keep producing. These two resources are becoming a major constraint: natural resources are not endlessly available and energy-costs have sky rocketed and are expected to continue doing so despite short term declines in oil prices.

The game is changing and we are seeing the entrance of a new generation of companies with business models that take scaling to new levels. What do Spotify, Square, PayPal, Facebook, and Pinterest have in common? They serve millions of users with a very small team of employees.

Without repeating the beating-a-dead-horse discussion of when a company stops being a startup, for the purposes of this article I propose the following definition: a startup creates and commercializes a proprietary product, enabling it to scale rapidly to global proportions without linear dependence on human capital.

In other words, a small team can conquer the world. Think about Snapchat and Instagram which serves 100 million³⁵⁴ and 300 million³⁵⁵ monthly users respectively with less than 200 staff each. They are **Hyper Scalable**. A company is Hyper Scalable when it offers value at a near zero cost simultaneously to millions of users with a disproportionate small team.

Consider Skype with 1,600 employees to handle 40 percent of all international telephone traffic. National telecommunications providers with tens of thousands employees on their payroll can claim only a fraction of Skype's call volume. Adding insult to injury, the existing players also have to bear the heavy cost of the infrastructure - giving Skype a free ride. In other words, Skype is using someone else's assets as a free lever; in this case company owned assets.

Airbnb, an online marketplace that connects people looking to rent their homes with people who are looking for accommodation, is worth more than the Accor, Hyatt, and Intercontinental hotel chains and is already has market capitalization twice that of the nearly 100-year-old Hilton Group. Airbnb's 800 employees can offer over a million rooms to the market without a single cent of investment in real estate. Hilton on the other hand needs over 300,000 employees to operate 680,000 rooms and requires the owners to make massive real estate investments. In other words, Airbnb is using someone else's assets as a free lever; in this case people's homes.

Similar extreme disproportionate relationships between the size of the team (super small) and market impact (gigantic) can be found in the Hyper Scalable business models of Uber, Twitter, Netflix, Kickstarter, EventBrite, Dropbox, Evernote, BlaBlaCar, and booking.com to name a few.

These born-on-the-web companies have scalability in their DNA. They don't open a costly factory, they simply open their laptop. They don't need precious natural resources - instead they mine creativity and innovation. While trading and manufacturing businesses suffer from inventory control, these technology startups have no inventory - perfecting the just-in-time supply and production model.

These Hyper Scalable startups are not constrained by expensive logistics, physical transportation of goods, or distribution channels. For digital service startups, the product is the distribution! While size matters for any other business model, these startups achieve scale without size effectively creating a potentially unlimited upside to growth.

Hyper Scalable firms also solved the conundrum of service companies: humans are not scalable. Even the best sales person works a maximum number of hours per week, just as a retail store is typically closed almost as much as it is open. Compare that with their digital equivalents: the landing page and the e-commerce website; both run 24 x 7 x 365; cost a fraction of their physical counterparts; are usually multilingual; and most importantly, they can serve massive numbers of prospects and customers around the world simultaneously. In other words, they are Hyper Scalable.



THE HYPER SCALABLE BUSINESS MODEL

But how do you become Hyper Scalable? What's the business model behind it? The answer requires us to understand the rules of the fast emerging digital world and find the necessary levers. More specifically, it requires a combining of the strengths of machines (precision and scale) with the strengths of people (insights and creativity) and using them as levers for growth and innovation. There are, in my view, three critical building blocks (see figure 1) to create a Hyper Scalable business model - these are explained below:

Building block 1: A Hyper Scalable business model is based on intangible assets

The range of intangible assets in the economy continues to grow - think of music, books, movies, photos, patents, franchising, algorithms (software), blockchain, and data. In a digital world, the reproduction cost of these intangible assets is virtually zero while the quality remains 100 percent however many times you reproduce a digital asset.

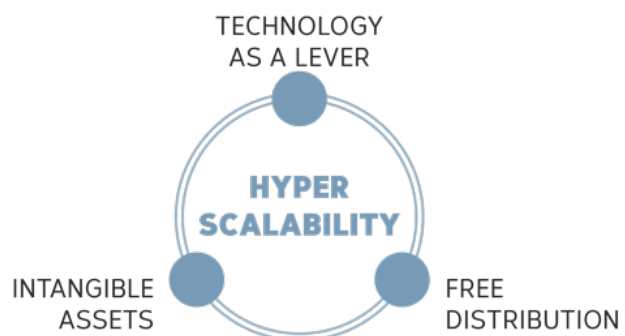


Figure 1 - Critical building blocks of a Hyper Scalable business model

Where tangible assets (e.g. atoms instead of bits) are a required part of the business model, they should be leveraged not owned - as Skype and Airbnb showed in the above examples. The same goes for booking.com and Uber. Note that even firms selling physical assets like Alibaba are leveraging third party assets as well. All they have is a website and an office while In contrast; Amazon is building warehouses and investing in the supply chain on a massive scale - potentially giving it more control over the service level. However, in its 20 year history, Amazon has yet to report an operating profit.

Building block 2: A Hyper Scalable business model requires (information) technology as a lever

In medieval times, music was not scalable. A troubadour played in markets and castles and was paid for the entertainment. Only the invention of the phonograph as a carrier of sound in 1877 by Thomas Edison made music scalable. Music could be recorded, distributed and enjoyed without the required presence of the musician, effectively removing the constraints of time and space.

Not surprisingly, as the technology advanced, we saw the emergence of a new species in the music biotope: rockstars. A rockstar is an example of a successful Hyper Scalable Artist. Without the artist being present, thanks to technology, people can enjoy music at anytime and anyplace making artists omnipresent.

Building block 3: A Hyper Scalable business model uses the Internet as a free distribution channel

Perhaps the biggest lever in the history of humanity is the invention of the wheel. But the value of wheels is in proportion to the availability of roads. Twenty years ago, the Internet - in essence a distribution and sharing technology - laid the seeds for a new kind of scalability. Information technology is to the Internet as wheels are to roads - it multiplies its value massively. Through the Internet,

we can reach 40 percent of the world's population at almost zero cost. The moment we go online, we are also global. Global is the default in a world with increasingly better bandwidth and cheap connected devices. Serving a customer digitally on the other side of the planet is as easy as a customer around the corner. Clearly fulfilling the order may for physical goods may be more complex when serving customers on the other side of the world - but the internet has made the transaction possible.

In the case of music, the MP3 format and free distribution over the Internet created a killer combination - just ask the remnants of the old music industry who were savaged by the barbarians-at-the-gate: technology driven companies such as YouTube, Apple, and Spotify. As an intangible asset, music is now dominated by companies that understand the rules of the digital world. A free distribution channel also tilts the power balance from sales to marketing.

The whole sales funnel can take place in the cloud, from generating to closing leads. In a digital world, the landing page is the new salesperson and marketing is simply sales at scale.



DESIGNING TOMORROW'S COMPANY

By combining the trinity of create, replicate, and scale as levers for its business model, tomorrow's company can achieve Hyper Scalability. This is the stuff that the new digital heroes are made of. How else than by applying this combination can a WhatsApp with around 60 engineers support an impressive 18 trillion messages per year? More than twice the total of 7.5 trillion text (SMS) messages that the world sends together annually. There is a reason why economists call technology the “only free lunch” out there.

Is Hyper Scalable compliance a guarantee for success? No, it's not. For a Hyper Scalable company to be successful, it also needs to find a big enough market with a deep need or pain that can be addressed. A simple but effective way to achieve that is to quantify it along two dimensions: pain and frequency; the greater the pain and the greater the frequency of occurrence, the better. One way is to express the extremes on the two dimensions is to picture it as a **shark bite** versus a **mosquito bite** problem (figure 2.)

A **Shark Bite** Problem has a big impact (you are bleeding to death), but it happens once. If you find customers with a shark bite problem, they will be happy to pay (a lot!) to solve their problem but unfortunately this problem does not occur very often. In other words: You found a business but not a sizable market.

A **Mosquito Bite** Problem occurs often (in summer) but has little impact (you can live with it). The problem is widespread but the issue is so small that consumers, although annoying, are not willing to spend (much) money on it. Doing nothing is the most common response. In other words: you found a sizable market but not a

viable business. For most new technologies, the real competition comes in the form of inertia as other suppliers and potential customers stick to what they know.

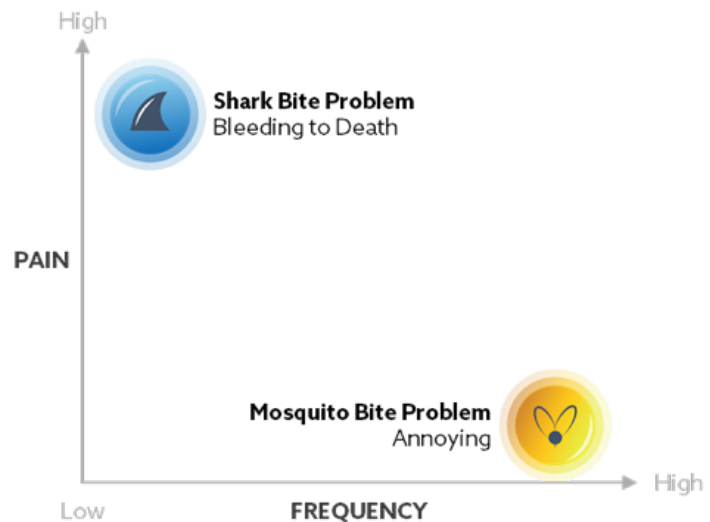


Figure 2 - Shark bite versus a mosquito bite problem

If a business can achieve network effects (better known as Metcalfe's law) it can establish a leadership position in a market. A network effect occurs when a good or service becomes more valuable when more people use it. The first telephone on its own had little or no value. Who can you call? The more people that have a telephone, the greater the value of the device is.

According to Metcalfe's law, the value of a network is proportional to the square of the number of connected users of the system. Two telephones can make only one connection, but five can make ten connections, and 12 can make 66 connections. The greater number of users with the service, the more valuable the service becomes. Businesses like Kickstarter, PayPal, Facebook, Slack, and EventBrite are enjoying network effect benefits.

Hyper Scalability is also giving birth to **full stack** companies. These companies control the full customer experience and value chain as never before and on an immense scale. It's not a surprise that Google launched hardware (Chrome notebooks), operating systems (Android), and acquired Nest to impact the consumer's life. Netflix produces its own movies and content now.

Uber knows all about the customers and drivers enabling it to set dynamic pricing based on real-time demand and supply. The pricing algorithm is perhaps the most powerful component of Uber's business model. Uber takes yield management to a whole new level. Dynamic demand-based pricing is common in the travel industry but it seems inevitable that in a digital world, the whole market is going in that direction. The writing is on the wall.

Is Hyper Scalability the same as being disruptive? No, it's not. Tesla is disruptive without being Hyper Scalable. Nor is the free Metro newspaper Hyper Scalable, yet its innovative business model is disruptive for the newspaper industry, especially in the train travelers segment.

Startups and companies that are pondering how to be disruptive or how to be innovative are asking the wrong question. The same goes for companies that desperately want to put a digital strategy in place. Not only is, "What should my digital strategy be?" the wrong question, it makes them focusing on the wrong things:

1. how to digitize processes and data;
2. and the ever changing technology.

I believe the real question firms must ask is how to be Hyper Scalable. The answer will inevitably lead to disruption, innovation, and a digital strategy.



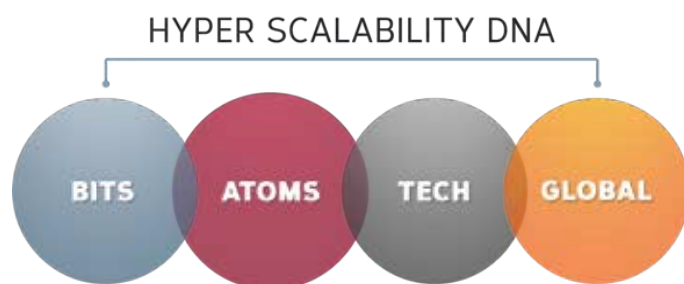
FROM THE BELL CURVE TO THE EXPONENTIAL CURVE

In a market where the constraints of space and time are obsolete, the old forms of protection from competitors that companies enjoyed - most notably geographic - is being removed. As a result, almost every market that is digitized effectively becomes a winner-takes-all market. The Bell distribution curve will be replaced with a Power law whereby the second company enjoys a market share that is half of the one before. Think Google. The competition is not a little bit smaller; it's less than half the size of Google.

In this new world, old economy principles - such as ownership of assets - become a constraint on growth, and the notion of pursuing economies of scale now provides a rather small incentive for building large corporations. We are in what Andreessen-Horowitz calls the, "deployment phase of the internet"³⁵⁶. There was never a better time to build innovative digital products and services with minimal investments.

The sky is no longer the limit. The potential for creativity has increased exponentially and the pace of just about everything continues to accelerate, creating a world of opportunities, a world where access trumps ownership.

Hyper Scalability can be achieved by any company irrelevant of its location. While natural resources are limited, creativity and innovation have no limits. While labor might be expensive, Hyper Scalability can be achieved by just a handful of talented people leveraging technology. Our wealth, after all, is determined not only by our own skills and talents, but by our ability to access the ideas of those around us; there's a lot to gain.



WHERE IS ALL THIS LEADING?

Hyper Scalable companies are not a side show. They are likely to dominate every market in a world that is eaten by software³⁵⁷. Software is not an industry anymore; it will impact every single company. Every company will become a software company in the same way that every company in the 20th century was a pen-and-paper company.

At the extreme end of Hyper Scalability, we are moving to a business world where a company is in essence nothing more than an algorithm. With the emerging technologies of Natural Language Processing and Cognitive Systems, such as IBM's Watson, it will be possible to create services that are self-improving. What this means is that in essence, even the underlying business model of a

company will be able to improve and even innovate itself. Indeed, we are at the dawn of the age of **algorithm-only zero-employee companies the so-called RoboCorp.**

Our economies and societies are based on the traditional factors of production: land, labor and capital. Our tax systems, and therefore our welfare society, are based on these pillars. But now technology is shifting unprecedented wealth to a very small group of people. It's time to rethink how to cope with this new game in a winner-takes-all-society.

Here are some questions that your business needs to address around its strategy in a digital world:

- What are the intangible assets that our business model is based on - what value do we place on our data?
- How can we leverage the tangible assets that the business is using?
- How could we re-conceptualize our business as a Hyper Scalable organization?

I end with the appropriate words of Oliver Samwer: “God has given you the Internet!”



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