

GAFAnomics: new economy new rules / 4 Superpowers to outperform in the network economy



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This is an article on the network economy, adapted from GAFAnomics Season 2¹ by the Innovation Agency FABERNOVEL.

1/GAFAnomics: A new economy wrapping the planet

GAFAnomics [ga-fa:-nom-iks], noun:

A modern, networked, economic system spurred by the eponymic GAFA (Google, Amazon, Facebook, Apple) but also encompassing Unicorns, Chinese tech giants and all other companies changing our lives through computer technology.

¹<u>http://fr.slideshare.net/faberNovel/gafanomics-season-2-4-superpowers-to-outperform-in-the-network-economy</u>.



2015 has been an all-time high for the fantastic 4 of the tech industry: Google, Amazon, Facebook and Apple (GAFA). Facebook grew bigger than China with 1,55Bn users, while Amazon became the most valued retailer in the world, leaving Wal-Mart behind. Apple and Google, the two most valuable brands on the planet, are pursuing their ascension, conquering markets one after another.

The economic shift we're witnessing gets even clearer when we look at GAFA's aggregate performance: in 2015, for the first time, the combined market cap of GAFA has surpassed the old empire's index. The new giants, that are all in average 20 years old, are valued \$200Bn higher than the 40 most valued companies on the French Stock Market (the CAC40), such as the pharmaceutical giant Sanofi, the renowned beauty brand, L'Oréal, and the leading commercial aircraft manufacturer, Airbus. GAFA have become industrial giants of the new economy, an economy that has its own rules and its own market mechanisms: we call them GAFAnomics, or "rules of GAFA".

After decades of growth, this new economy finally seems to have reached maturity. Indicators include:

- The creation of Alphabet- a result of the classical "Legacy VS new businesses" dilemma now preoccupying the not-so-young Google.
- GAFA's difficulties to innovate in an ever-increasing competition (with failures like Google Glass, Google+, Amazon Fire Phone, or Facebook Home). Easy innovation appears to have become a thing of the past.
- GAFA's fight for market shares, rather than the growth points- as shown by Apple's hit at Google's business with iOS8's ad blockers or Amazon's decision to forbid the sales of Google Chromecast and Apple TV on its platform. Seems like this world ain't big enough for the 4 sheriffs!

Another hint at the existence of this new economy is the commoditization of GAFA's model: GAFA are facing an increasing competition from all around the world, be it from China (with Alibaba, Baidu, Tencent and Xiaomi) or from Russia, Japan, Korea and India that all have their own homegrown GAFA clones.





Moreover, we're seeing a new breed of companies, drawn upon GAFA's legacy, that are changing our lives and accelerating the economy of GAFAnomics. Some are still privately owned, known to most as the 'unicorns'. thers have taken the next step and entered the stock market, like Netflix, Airbnb, Tesla and Uber, that by themselves have formed a new title, NATU. These new players have taken things to a whole new level. It took Snapchat only 18 months to reach a \$1Bn valuation when it took Google 8 full years. For a Fortune 500 company, it took 20 years on average. This explosive growth explains why in 2014 GAFA's cash could buy all of the 42 unicorns, whereas in 2015 they could afford only the top 3 of this growing club of already 119 unicorns.





Reaching \$1B valuation takes less and less time. In average, unicorns born after 2009 reach a \$1B valuation within 18 months — Source: Exponential Organizations (by Salim Ismail)



Yet, despite possible appearance, the newcomers are not threatening GAFA's supremacy. GAFA have been the one to pave out the way for the companies to come, allowing them to reach ever high growth rates and funding rounds.

Think of Uber. It uses AppStore, the Play Store and most recently Facebook Messenger as platforms for their apps and communication. It stores and manages data with Amazon Web Services.t geolocates travellers and cars, as provides all the navigation services through Google Maps. Such reliance of GAFA infrastructure is not a case on its own. Think of any unicorn today - and the same GAFA dots will connect. The Fantastic Four have spawned and nurtured an ever-expanding digital playground.

Competing or not, GAFA together with the new generation of digital players, have formed a new economy and state of rules. It's not anymore a tale of a couple of rising companies - the GAFAnomics is an economy that's mature enough to start existing of its own and reshuffle the rules of the games in the traditional industries. Actors of this new economy, the GAFAnomics companies, are disrupting long-lasting industrial empires and status-quos. To survive and keep relevant in the future, the leaders of the traditional companies need to understand the mechanisms at play and the unique structure of these new actors.

What is at the core of these new businesses? What makes them grow so fast?

2/ GAFAnomics Companies Operate as Networks

In their collection of essays Breaking Smart, Marc Andreessen (Netscape Founder, Highly Successful VC) and Venkatesh Rao (Researcher and Consultant) remind us that *"In the networked world, [the three most desirable things] are connections, connections and connections."*

Indeed, connections seem to be the secret to this new breed of companies. They have structured themselves as networks that connect users, businesses, products and information to one another. This structure is at the core of GAFA and their mission statement. As Google puts it:

"Basically, our goal is to organize the world's information and to make it universally accessible and useful".



A mapping of Google's Network

They did it by connecting pieces of information to one another through their indexation algorithm. Connections through citations between web pages are the cornerstone of Google's algorithms that allows the users to connect to the information through a simple search engine. With time, Google enriched its pool of information that the users could connect to, adding images, locations and videos. It also allowed users to connect to each other through services like Gmail or Google+, and businesses to connect to users through AdWords. The Android platform was the cherry at the top to serve as the entry point to the Google World.

Facebook also built a network of users, business and information, with a clear mission in mind: *"Facebook [...] was built to accomplish a social mission*—to make the world more open and connected." The same is true for Amazon and Apple.

GAFA have built open networks of their own and has made us enter the Network Economy. For companies, flourishing networks have become one of the most important assets to aspire for.





The network structure of this new economy was explored in the late 90's by thought leaders, including Hal Varian, Google's current Chief Economist² and Kevin Kelly, Wired's co-founder³. One of the only recent insights about this matter was published in 2014 in HBR under the *title "What Airbnb, Uber and Alibaba have in common?*"⁴. Authors of the article classify companies in 4 categories:

- **Asset Builders**: These companies build, develop, and lease physical assets to make, market, distribute, and sell physical things. Examples include Ford, Wal-Mart, and FedEx.
- **Service Providers**: These companies hire employees who provide services to customers or produce billable hours for which they charge. Examples include United Healthcare, Accenture, and JP Morgan.
- **Technology Creators**: These companies develop and sell intellectual property such as software, analytics, pharmaceuticals, and biotechnology. Examples include Microsoft, Oracle, and Amgen.
- **Network Orchestrators**. These companies create a network of peers in which the participants interact and share the value creation. They may sell products or services, build relationships, share advice, give reviews, collaborate, co-create and more. Examples include eBay, Red Hat, and Visa, Uber, Tripadvisor, and Alibaba.

Through extensive studies using this classification, the authors discovered that from all 4 categories, network orchestrators turned out to be creating the largest value

² http://www.businessweek.com/chapter/shapiro.html

³ New Rules for the New Economy, Wired http://www.wired.com/1997/09/newrules/

⁴ "What Airbnb, Uber and Alibaba have in common?", HBR https://hbr.org/2014/11/what-airbnb-uber-andalibaba-have-in-common





Source: "What Airbnb, Uber and Alibaba have in common?".

But some things still left us wondering: What is it that makes the network orchestrators so successful?

From the Value Chain to the Value Loop

First of all, companies that structure themselves around networks create value through a value loop, and not through a value chain, as thought for the past decades. This is partly due to new markets, called multi-sided markets, where clients of a company are both individuals and businesses. The study of these markets earned Jean Tirole his Nobel Prize in Economics⁵.

⁵ Two-Sided Markets: A Progress Report, Jean-Charles Rochet, Jean Tirole

http://www.tse-fr.eu/sites/default/files/medias/doc/by/rochet/rochet_tirole.pdf





In a classical economy, value flows through a simple chain-from suppliers providing raw materials to the corporation (like Ford) that transforms them into products. The products are then sold to consumers, mostly through retailers. This is a typical form of a concentrated market, where most of the value is created at a single place, here the factories. Companies look to concentrate as much capital as possible (assets and human capital) to maximize value transformation. The company only captures value (money) when the transaction occurs but doesn't capture any of the ongoing value (time, data, money) created by its products during their usage.

In a network economy, value is produced inside a value loop. Companies capture every unit of value created by products or users- it then transforms it to improve products and, finally, redistributes it back to users.



Let's take Google as an example:

- Google creates value for users by giving them access to an almost infinite and timesaving source of information.
- Google captures value from these users by aggregating data about their product usages. These pieces of information are exploited to improve the search engine as a whole and to tailor future research to users, thus increasing value creation. Google also captures users' time in the form of attention.
- Google creates value for businesses by connecting them with users in two main ways. First, by referencing their content, and creating a link between users and businesses through Google Search. Second, by allowing businesses to advertise to targeted users through Adwords. In order to do so, Google exploits the data it had gathered about users and monetizes their attention.
- Google captures value from businesses by aggregating their content through indexation, thus increasing the value of its search engine. Google is our main source of information, but rather paradoxically, it doesn't produce any of the information it gives access to.



This value loop allows companies to create and redistribute value in a perpetual cycle, reminding us of Lavoisier's famous law: *"Nothing is lost, nothing is created, everything is transformed"*. This cycle is at the core of GAFAnomics companies' models, allowing them to maximize value creation by minimizing value losses.

This model is not limited to digital products alone. The "Internet of Things" is a way to create value loops around physical objects by capturing the value they create and delivering additional value accordingly. GAFAnomics companies organize value flows very efficiently inside their proprietary networks, giving them indisputable competitive advantages. But it is not enough to explain their success and unstoppable growth.

3/ GAFA's Four Superpowers

We can characterize the networked companies with 4 key aspects, we call them "the superpowers": they're magnetic, infinite, real-time and intimate.

These powers give them leverage to grow their user base, capture value, and redistribute it in accordance with each user's needs. We believe these superpowers are the cornerstones of GAFAnomics companies' power. We also believe that the GAFAs do not have a monopoly of the superpowers- they can be replicated by any company that wants to revive its competitiveness in the new network economy.

The Magnet Enterprise: Managing Very Small Units





Networked companies are able to detect, organize, and animate very small units of value. **They leverage** excess capacities and externally created value to capture and deliver micro deals. Their competitive advantage is to deal efficiently with billions of small transactions and to capture value created outside their walls.

1- Capturing and redistributing excess capacities

Theory: Excess capacity is usually defined as a situation in which actual production is less than what is achievable for a firm. ⁶ The same notion can be applied to individual goods and assets, and refers to the amount of time they are left unused. By being connected to individuals, networked companies can identify and exploit these excess capacities, creating a market for under-used assets.

Example: By referencing and leveraging room's excess capacities (= time where the room is not used, i.e. empty), Airbnb can offer 1,4 million rooms on its platform, twice the number of rooms in Hilton Worldwide's portfolio. Airbnb does this at a nearly zero marginal cost, when Hilton has to spend around \$200K per room opening.

⁶ http://www.investopedia.com/terms/e/excesscapacity.asp



Quote: "There is a new paradigm reinventing capitalism. [...] When excess capacity is harnessed by the platform and different peers participate, a completely new dynamic is unleashed. [...] This cycle of opening up excess capacity is the path to abundance." — Robin Chase, ZipCar founder

2- Opening up to capture externally created value

Theory: A system's viability depends on its capacity to create opportunities for others.⁷ Synergistic benefits strengthen and accelerate the adoption of a system, while enhancing its value at the same time. The key question to ask is then: "Is it easy or difficult for others to invent something that plays off on your invention?" In the Network Economy, companies open part of their system. While maximizing opportunities for others, they enrich their own system with greater applications and reduce R&D costs.

Example: By leveraging developers' value creation, the AppStore offers 1,5 million apps, increasing the value of Apple devices. It would have taken Apple 519,000 years of an in-house developer's time to populate such a catalog itself.

Quote: "There is no future for hermetically sealed closed systems in the Network Economy. [...] The more dimensions accessible to member input and creation, the more increasing returns can animate the network, the more the system will feed on itself and prosper." — Kevin Kelly, Wired Co-founder

⁷ K. Kelly, 1999, New rules for the New Economy



The Infinite Enterprise: Targeting the 100% Profit Consumer



Once critical user mass is achieved, networked companies use highly scalable software and services to achieve zero cost delivery. Thanks to the *network effects* and the *zero marginal costs*, they can grow indefinitely in revenue with minimal impact on costs. Their competitive advantage is speed of scale and profitability.

1- Network effects: mother of all growth

Theory: Network companies' exceptional growth come from network effects⁸: after reaching critical mass of users, the more they grow by linking entities (information, users, producers, etc.) to their network, the more their network is attractive to other entities. Thus, networked companies' growth is in perpetual acceleration, making them incredibly scalable.

⁸ https://en.wikipedia.org/wiki/Network_effect



Example: The network effects are key at boosting Facebook's ad revenue, which grows faster than its number of users... From 2010 to 2014, Facebook's number of users has been multiplied by roughly 2.6 while its revenue grew 6.3 times.

Quote: "Technologies subject to strong network effects tend to exhibit long lead times followed by explosive growth. [...] As the installed base of users grows, more and more users find adoption worthwhile. Eventually, the product achieves critical mass and takes over the market." — Hal Varian, Google's Chief Economist

2- Programmability: towards zero marginal cost

Theory: The marginal cost represents the cost incurred by producing one additional unit of a product. For networked companies this cost is getting closer to zero every year. This is due to 2 reasons.First, most of the goods or services they're offering are non-rival: once an app has been developed, it can be provided to all consumers, there is no need to develop a new app for each customer - as is the case with physical goods. Second, networked companies have automatized most of their processes, giving them the ability to scale fast and increase their volume of production without having to extend their human capital and incur any more expenses.

Example: Waze crowdsources data from users to offer traffic and navigation services. Any additional user is served at zero marginal cost through a simple duplicable app, and user herself provides additional value to the whole community. This principle makes Waze's model profoundly scalable and infinite.

Quote: "Intense competition [...] boosts productivity to the optimum point in which each additional unit introduced for sale approaches 'near zero' marginal cost. In other words, the cost of actually producing each additional unit [...] becomes essentially zero, making the product nearly free. »— Jeremy Rifkin, Economist and Author



The Real-time Enterprise: Instantly Tuning Value



Networked companies use real-time data feedback to instantly optimize market fit and improve products' value. They use *optimum management* and work in *perpetual beta*⁹ to answer user needs in real-time. Their competitive advantage is instant fit-to-market.

1- Optimum management and behavioral economics

Theory: By monitoring usage and aggregating huge amounts of data about consumers' behavior, networked companies are able to understand the market in real time. Following their own behavioral insights economic modeling, these actors adapt fast to the demand with the appropriate supply, adjusting market prices, returns and resource allocation. These types of techniques have been vastly used by hotels and transportation companies under the Yield Management concept. Network companies extended the scope of application of Yield Management to all type of goods and services.

Example: By gathering and analyzing massive data on consumers, vendors and competitors, Amazon readjusts its prices 2.500.000 times a day, while Wal-Mart does it only 2000 times a day.

⁹ https://en.wikipedia.org/wiki/Perpetual_beta



This way, Amazon is always closer to the market than its competitors, lowering or increasing prices depending on the time of the year, and in regard to competitors' prices.

Quote: "I joined the company in 2002 and initially worked on the economics of the AdWords auction. [...] I have also worked on query and revenue forecasting, advertiser behavior, ad effectiveness [...] We have hundreds of statisticians, econometricians, data scientists, and other quantitative analysts at Google." — Hal Varian, Chief Economist at Google

2- The perpetual beta and the technical surplus

Theory: Traditional companies usually deliver finished products to their consumers, creating a technical debt: as time goes, products decreasingly answer users' needs. Instead, network companies create technical surplus by working in perpetual beta: they deliver a first iteration of their products and services, and then regularly add new features that are based on their user insights. As the products evolve in direct response to the evolving user expectations, the network companies are able to create customer loyalty.

Example: Google leverages its network to identify user needs and improve its products accordingly. You'll never hear the company talk about V0, V1 or V2... Their products are in perpetual beta and improvements are implemented every day. In 2000, query monitoring revealed many users were typing in « Jennifer Lopez Grammy picture ». To meet users' expectations, Google came up with the idea of adding a search engine for pictures to its core search engine: that's how Google Images was born!

Quote: "The open source dictum, "release early and release often » [...] has morphed into an even more radical position, "the perpetual beta," in which the product is developed in the open, with new features slipstreamed in on a monthly, weekly, or even daily basis. " — Tim O'Reilly, Founder of O'Reilly Media



The Intimate Enterprise: Hospitality is the Norm



Network economy



Companies offer tailored products and customization possibilities to each of their customers, creating an intimate and long-lasting experience.

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Networked companies use customer knowledge to fine-tune and personalize the experiences they deliver to each customer. Large-scale customization is at the heart of their products. **Targeting** and **customizing their products** to every single user, they create intimate long-lasting relationships. Their competitive advantage is customer hospitality and comfort.

1- Targeted is the new mass

Theory: Today we produce more data in just two days than all the data produced since the beginning of mankind till 2003. In this ocean of information and options, users want to see only content that suits them best. Network companies are able to accurately target users with appropriate content (products, information, advertising, among others) because they have a network of precisely identified data, deep insights into the user behavior and powerful algorithms to connect the dots behind all the data. This ability to provide highly personalized and targeted content ensures a high value-added for the users.

Example: Netflix tailors each viewing experience creating a unique catalog of selected content for each user. Suggestions are based on the content a user watched previously, how they watched it (finished watching it or not; the day and time of the day they watched it, etc.) and on the preferences



of users with similar behaviour. 75% of the watched content on Netflix is based on targeted recommendations.

Quote: "Nowadays the problem is not the information access but information overload. It is no accident that the most popular websites belong to the search engines, those devices that allow people to find information they value and avoid the rest." — Hal Varian

2- Customization is the new standard

Theory: Mass customization is defined as the concept of "producing goods and services to meet individual customer's needs with near mass production efficiency." at At virtually no additional cost, network companies have made mass customization the new standard by providing platforms where business entities can offer their services to customers, who on the other side, have a large number of offers to pick and choose from. Each of the users can customize their own experience, which, in turn, increases their perceived value of the products and services, and creates a long-lasting relationship with the company.

Example: Every iPhone is the same when it exits production chain but becomes unique after its first 30 minutes of usage. Each user would adjust the phone setting and download apps of her preference. This is the magic of mass customization.

Quote: "I believe that in the long run, all credible large-scale Internet companies will provide platforms. Those that don't, won't be competitive with those that do, because those that do will give their users the ability to easily customize and program as to unleash supernovas of creativity." — Marc Andreessen, Founder of Netscape and A16Z.

The 4 powers we uncovered above, all originate from network structures. Any company wishing to benefit from the associated competitive advantages has to think and structure itself as a network.

But how can a company structure itself as a network?



4 / How to become a networked company to win in a world dominated by GAFAnomics?

In order to win in the network economy, companies can take two complementary approaches: connecting to existing networks and/or creating networks of their own. These two approaches can be split into 5 strategies, varying in terms of value created and implementation complexity.





1. Plug in: Limited Value, Easy to Do

Know how to leverage GAFA's massive networks

Many companies see GAFA as a threat to their business. This is often true. But GAFA are also infrastructures that can be easily leveraged. There are two main ways to do this:

- Think of GAFA as distribution channels that connect you to the world: Amazon and Apple's digital stores connect you with millions of customers in just a few clicks, while Google and Facebook can bring you massive, highly-targeted traffic AT&T, for example, spends around \$80m on Google Adwords each year. Uber itself would be nothing without the AppStore for distribution, Google Maps for navigation, or Amazon Web Services for storage.
- Tap into GAFA features to improve your service: for instance, FedEx's online service¹⁰ is built on the Google Maps engine, and Chase Bank's¹¹ app users can now log in with iPhone's TouchID.

2. Partner: High Value, Easy to Do

Deal exclusive partnerships with GAFA to create a competitive edge

Some large companies have already implemented this strategy very successfully. BMW integrated the Amazon Cloud Player into their cars¹², Southwest Airlines offers Apple's Beats music service for free on their flights¹³, and Audi¹⁴ partnered with Amazon to test e-commerce deliveries into trunks of customers' vehicles in Munich.

¹⁰ http://about.van.fedex.com/blog/from-google-blog-fedex-com-re-imagined-with-google-maps-engine

¹¹ http://9to5mac.com/2015/05/30/chase-bank-iphone-app-now-lets-you-login-with-touch-id/

¹² http://www.engadget.com/2013/12/03/amazon-cloud-player-bmw-mini/

¹³ http://www.swamedia.com/releases/southwest-airlines-launches-new-onboard-entertainment-service-with-beats-music

¹⁴ http://www.cnbc.com/2015/04/23/amazon-tests-delivery-to-your-car-trunk.html



3. Compete head-on: Limited Value, Hard to Do

Unless you think you can create a billion-member social network or a better search algorithm than Google, this strategy is not for you. Many have tried, and many have failed. Remember when *The Wall Street Journal* tried to create its own social network, or when Microsoft tried to create its own iPod? Even Google itself failed when it tried to launch its own competitor to Facebook¹⁵.

4. Differentiate: High Value, Hard to Do

Compete by going where GAFA have not been

This strategy requires a lot of up-front investment in technology in order to reach critical mass, but it can it can offer a high return. There are three ways to achieve it:

- Target geographies that are not covered by GAFA: Baidu in China and Yandex in Russia are both major search engines in their respective countries.
- Target niche customer segments: in spring 2015, the firm Silent Circle introduced the BlackPhone 2¹⁶, a highly secured smartphone designed for security-oriented corporate users. Nokia's HERE maps¹⁷, which Audi, Daimler, and BMW recently acquired, offers a Google Maps competitor optimized for car and truck drivers.
- Leverage your specific assets and image to differentiate: thanks to its knowledge of the sports sphere and its strong brand, Nike launched Nike+ and fuelband, entering the IOT market. It also launched the Nike+ Fuel Lab in 2014, aiming at developing unique software for athletes, encroaching on GAFA's territory.

5. Co-innovate: Very High Value, Easy to Do Experiment hand-in-hand with GAFA

¹⁵ http://uk.businessinsider.com/what-happened-to-google-plus-2015-4

¹⁶ https://www.silentcircle.com/products-and-solutions/devices/

¹⁷ http://www.wsj.com/articles/bmw-daimler-audi-agree-to-buy-nokias-here-maps-business



Legacy companies will find the best returns on their investments when they work with GAFA to explore new business horizons. Many companies have leveraged their core business and seized the opportunity:

- Facebook partnered with Eutelsat, the satellite giant, to provide Internet access in Africa.
- Apple partnered with IBM¹⁸ to create apps for the B2B world, and asked Hermès¹⁹ to design a wristband for its Apple Watch.
- Google employs this strategy frequently, partnering with firms like Abbvie²⁰ (on the Calico health project), Levi's²¹ (to create innovative fabric for Project Jacquard), Mattel²² (to build a VR device for children), Disney, and many others.

These co-innovation projects are win/win opportunities, where no partner has more negotiating power than the other.

As Kevin Kelly, Wired co-founder, puts it: "There is no future for hermetically closed system in the Network Economy [...] Every time a closed system opens, it begins to interact more directly with other existing systems and therefore acquires the value of those systems"

In GAFAnomics, rethink your strategy, break silos, open up and connect to the networks to thrive and disrupt your own growth.

¹⁸ https://www.apple.com/fr/business/mobile-enterprise-apps/

¹⁹ http://www.apple.com/apple-watch-hermes/

²⁰ http://www.calicolabs.com/news/2014/09/03/

²¹ http://www.levistrauss.com/unzipped-blog/2015/05/google-levis-project-jacquard/

²² http://news.mattel.com/news/mattel-collaborates-with-google-to-reimagine-the-iconic-view-master-toy