ce-it

Is increasing

complexity

hindering

access

to modern

technology?

Technology empowers individuals

Technological advancements has empowered people to work in a way that was not thought possible in 1960. It has brought down walls, as information and techniques for learning new things are often freely available online these days. Starting a company that serves customers worldwide is easier than ever, because the technology is at your fingertips and in theory it is accessible to everyone. You can therefore say that technological development will reduce wealth inequality. And that is what is happening as you can see poverty decreasing worldwide. At the same time, we are seeing another form of inequality emerging and that is technical inequality, or perhaps more accurately feasibility, between companies.

The technical inequality is best visible when you take a look at tech giants such as Google, Facebook, Microsoft and Amazon. They have a scale that puts smaller organizations 5 - 0 behind at the first whistle. Just like when your local team is playing a match against FC Barcelona. That inequality is something we want to dive into. It is about IT in general, security, but also about direct competition. These are interrelated and is something that many people underestimate.

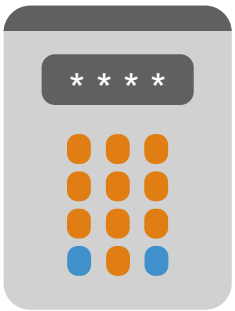
Where technology enables individuals to launch global operating companies, it is increasingly prohibitive for many existing companies to play on the same level as Amazon. Amazon has almost infinite financial resources with which they can compete on price, but they also have a big technical advantage. For years Amazon has been researching the prediction of the purchasing behavior of customers, so that packages can be sent even earlier. Maybe even before you as a customer have finalized the order. They use data intensively without the risk of data leaks being higher than at the local web store. This is because they have the means to organize this technically well. The risk therefore increases in a controlled manner, while a data breach at the local web store is more the result of ignorance or the lack of resources. And that is an significant difference.

To better understand the origin of the above, it is important to know more about security and networks in general.

Why security matters

The fundamentals of security are about preventing unauthorized persons or organizations having access to a network and information. This used to be relatively simple. You put a document with sensitive information in a safe or lockable cabinet and the building was secured with a lock and possibly an alarm. Nowadays this no longer applies. The document we mentioned used to be in one place, because there was only one copy. In 2020, the information from that document is on a server, perhaps locally on a laptop, and chances are that one or more people will have it in their mailbox. That same mailbox can be accessed in Outlook on a laptop, phone, tablet and a browser. And that browser is used by someone at home on a PC with unsafe plugins and the toddler also plays on that tablet. This is only a fraction of the challenges you face as an organization in securing data.

The increased complexity in the distribution and availability of data also applies to the security of networks. Think of ransomware, but also hacker groups that infiltrate a network by gaining physical access. The latter is interesting, because a group member may apply for a job at a company or arranges another form of visit, where he or she tries to gain physical access to the network. Once inside, the intention is to find data or install software that enables is. That is why organizations hire hackers who try to access a network through social engineering in order to expose vulnerabilities and the weakest link is often human. These are useful processes, but often not financially feasible for smaller organizations.



PASSWORD MANAGERS

Social engineering is mainly about cracking the human component in information security. An obvious component, because many people have a poor sense of security or can be fooled easily. Think of sharing sensitive information through unsecured email and (re)using weak passwords or even sharing them with others. It is not without reason that IBM has made 1Password available to its employees as password manager (that is approximately 350,000 people). That is of course not free and IBM will undoubtedly have negotiated a discount, but you are probably still talking about millions of Dollars per year. Yet they do, because a good password manager ensures strong passwords including management, which in turn forms the basis of security. It is something that many organizations do not use, even though you can improve the foundation of digital security with a relatively small investment.

Things used to be easier

We are not going to say that everything used to be better, but some things were less complex and therefore easier. At least in terms of security. If only because information was usually physically stored in one place, and with the first digital steps things were not too much different. You had a standalone computer without a network, so information was still kept in single place. No longer on paper, but digital. With the rise of networks, the complexity and the places where information was stored grew. At first these were local networks, nowadays those networks are connected to the internet and you may be working simultaneously with people from Japan, the Netherlands and the US with the same data.

The bigger the network and the more people working on that network, the more complex it is to guarantee security. This is reinforced because technical developments follow each other quickly, so that yesterday's knowledge may no longer apply today. The latter makes it difficult for many organizations to keep up, because there is a lack of resources for following all developments. Both in terms of knowledge and of money. That brings us back to the point of wealth inequality that we mentioned at the beginning. The wealth gap that exists among people increasingly applies to companies regarding technical possibilities.

This growing inequality will ultimately lead to a shift in the way companies can compete, as technology is a decisive ingredient for success in more and more parts of the economy.

We also see the trend of technical inequality, or rather feasibility, in the services we offer. Ten years ago we offered certain services for € 40 per month per user, the same service now costs € 100 or more. Purely because of an increase in costs due to growing complexity, not because our margin has grown for those services.

Ancient tech

In many cases these technical challenges do not apply to startups. They can effortlessly adapt to new technology, because there are no legacy systems. This is often different for companies that have been around for thirty years or more. Just look at traditional banks. Chances are that a significant portion of their systems still require Cobol programmers. A programming language that you can almost see as pre-historic nowadays. This has an effect on all fronts. For example, many people consider the Rabobank (a Dutch bank) mobile app as a refined web app and not as a fully-fledged mobile app like that of internet banks such as bunq or Revolut. Compare it to building a basement under a house. This is easier with a new house than with an existing house along side the canals of Amsterdam. This also applies to IT. Implementing new techniques in a legacy network simply more complex and expensive and that is where many companies struggle.

Consumer solutions

Due to the rising costs, we see a growing gap in possibilities for organizations. On the one hand, you have the companies that have sufficient resources and are at the forefront. Or companies that are set up as an early adopter, so that their legacy has always remained up to date. On the other hand, you have companies where IT has long been seen as an afterthought or where resources are limited. The gap between these types of organizations is widening. It is becoming increasingly difficult for the second group to close the gap, a comparable gap that you see between the rich and the poor in society. In the near future there might be a new reality where this group only has access to standard solutions just like consumers. That is worrisome, because technology is of growing influence on how you can compete. In the most extreme case, there might no longer be a business model for these companies. It is not without reason that a shock goes through entire industries when Amazon announces that they will enter that market. For the average company it is simply put impossible to compete with Amazon on a technical level.

Can we close the technologal gap?

The questions we should be asking ourselfs are what companies can do and whether we will soon be stuck with only giants such as Walmart and Amazon. The latter plays a role in several sectors, which is one of the reasons why companies in Belgium are not allowed to compete by delivering below cost. Dutch retailer Ahold tried to gain a foothold in Belgium with a price war, but the Economic Inpsection put a stop to that. Now that is not going to help directly in technology, although you could argue that keeping basic facilities accessible is a task of the government. But where do we draw the line?

Closing the technologal wealth gap, like the general wealth gap in society, is not an easy task. It is an interplay between companies, individuals and government. The latter is an indispensable link, when looking at national levels, for making knowledge accessible and keeping it that way.

What can governments do?

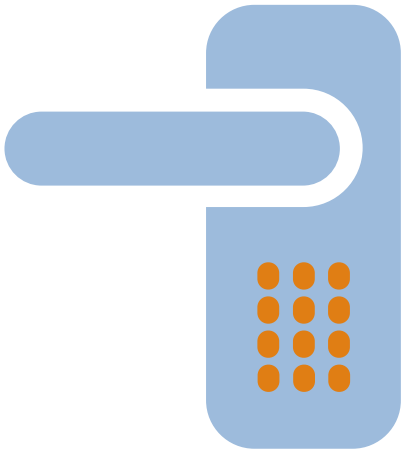
The government has a key position in the digital welfare gap. This is done in a direct way by keeping education accessible for everyone and by connecting education to the new digital reality. In secondary school, perhaps even sooner, children should learn how the digital world works. They do not necessarily have to build an app, but they have to learn the underlying logic. They need to understand what happens before anything appears on the screen, including security.

The government can also fuel digital welfare in a more indirect way. Israel is a good example of this. That country is under constant threat and cyber warfare has become one of the key areas for Israeli forces in protecting their country, with Unit 8200, a cybersecurity and intelligence team, as its spearhead. They are at the forefront of new technologies and are held accountable for a number of major hacks, including that of Iran's nuclear activities. Israel invests heavily in Unit 8200 and drives its members to innovative solutions. As a result, they have built up a lead over many other countries. People in this unit are intelligent, but are also forced to take another approach to a problem. A skill they keep applying after their service and that leads to successful businesses. Companies such as WIX and Palo Alto Networks were founded by former members of Unit 8200. Many companies founded by these people are bought by tech companies such as Google, and this is one of the reasons Israel is entitled Startup Nation. With Unit 8200, Israel therefore invests in both its defense and economy, because the members of Unit 8200 are ready to respond to the technological developments of tomorrow. A few years ago Forbes wrote a longread about Unit 8200 which gives more context to the above. You can read the Forbes article here: https://www.forbes.com/sites/richardbehar/2016/05/11/inside-israels-secret-startup-machine/#3d7b78b31a51.

What can companies do?

Companies are not powerless in this trend, but as a company you will need to adapt. A new type or organization and way of working is necessary. Break down the walls between end users and IT, make them one company with the same goal. For companies that practice Scrum, not just in words, the gap is often a lot smaller because different disciplines work more as a team. As a company, you have to let go of existing habits and encourage both employees and teams to learn new technologies. It is not without reason that Google encouraged employees to spend 20% of their time on their own projects. This drives innovation and, in the case of Google, often leads to new products with [nbox by Gmail as one of the best examples. Many of the Inbox functions have now been copied by Gmail itself although Inbox is no longer available.

The problem is that people most of the time only learn new things to a limited extent in their regular job, while as an organization you need innovation to close the technical prosperity gap. Just like the government, companies therefore have to challenge employees to learn new things and, above all, to think outside the box. It makes it easier to adapt to new technologies or even better, as a company you come up with new solutions that give you an advantage over competitors.



And Individuals?

As individuals, people are an indispensable link in closing the digital wealth gap. The government and the business community cannot do this alone. People must be curious about new technologies by investing their own time to learn about it. Even if it is just for having control over the work they do in the future.

Conclusion

Businesses that do nothing will become technically poor and keeping competitive will get harder and harder for them. There are opportunities for the companies that adapt to the new reality, although it will not always be easy or feasible to close the technical wealth gap. Sometimes a crisis helps, because it pushes both companies and people out of their comfort zone, where success in the future depends on creative ideas. We believe that one thing is certain: doing nothing as a company, will result in having limited access to techniques that are essential for being competitive in the future.

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