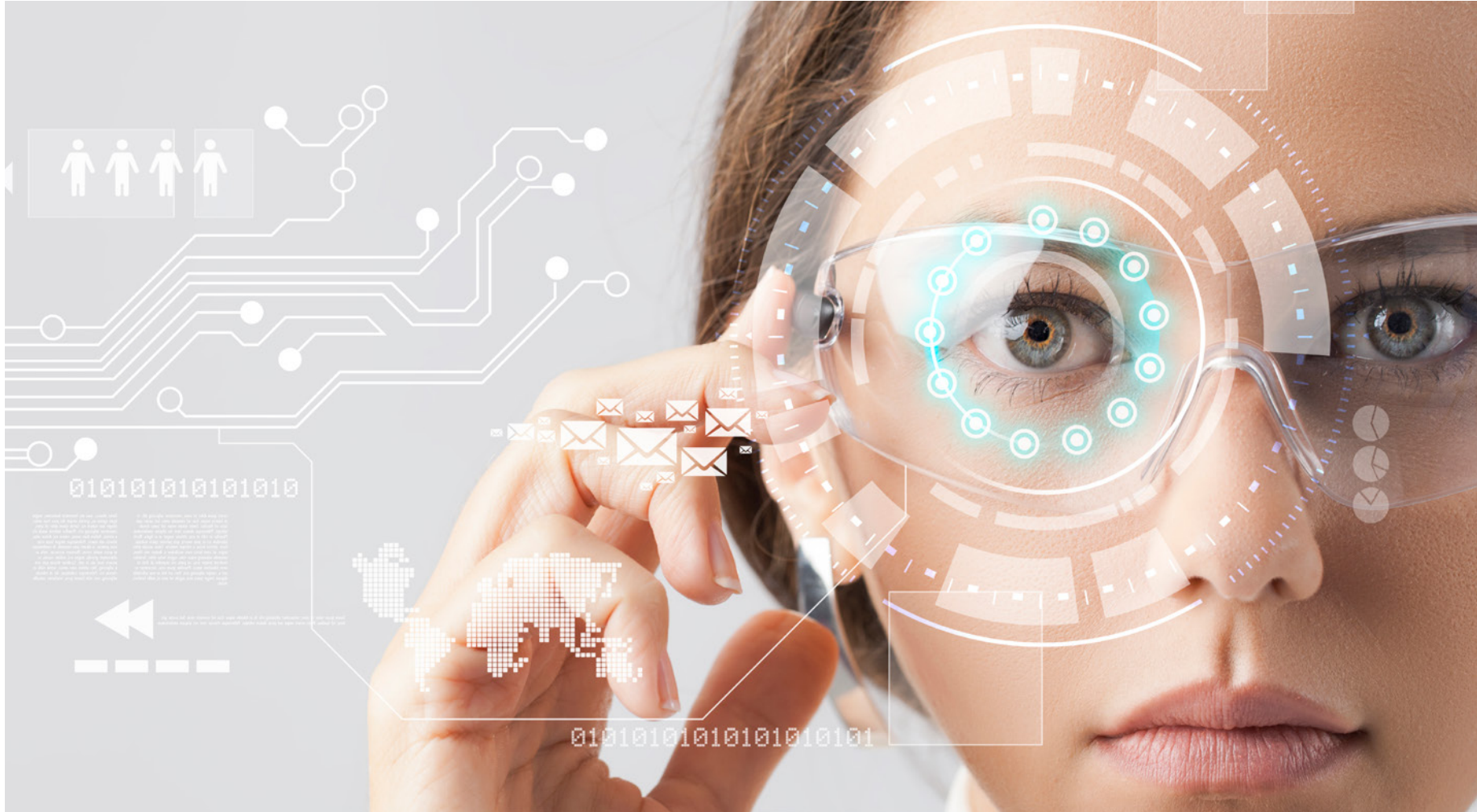


A borderless future?

The uncertain future of Technology, Media and Telecommunications companies in Europe

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At a glance

With 3.6 billion users worldwide and over 600 million users in Europe¹, the internet has become a ubiquitous part of people's lives. The ongoing digital revolution has created a level of connectivity that has redefined how people communicate and how companies conduct business. Traditional industries and value chains are changing, technological breakthroughs are happening faster than ever, information security has become a core concern, and industry regulations are quickly lagging behind practical market demands.

Technology, media and telecommunications (TMT) companies are positioned at the forefront of change and have been a major driver of the megatrend of technological breakthroughs. Still, this does not safeguard them from being disrupted themselves. They will need to continuously work on innovation in best-of-class offerings, developing new business models, and finding new revenue streams.

The speed of change brings many opportunities, but also some threats. It also makes it increasingly hard to predict the future of the TMT industry. To help envision this future, PwC has analysed two key uncertainties that can result in a series of scenarios. Each of these scenarios describes what the TMT landscape will look like. This can help industry players and investors in strategising and navigating the future.

In this document, we start with a contextual mapping of major trends that are shaping the TMT industry in Europe. Next, we explore two key uncertainties that will have a profound impact on how European TMT companies will grow and compete over the coming decade. An assessment of the scenarios uncovered by these key uncertainties is then performed, followed by the implications these scenarios have on winning strategies.

¹ Internet World Stats, 2016

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Factors driving change in Europe

The TMT industry is at the forefront of the digital revolution. New technologies are being adopted at an unprecedented pace, creating opportunities for companies to innovate and find their niche in the market. We see various Technology companies transitioning from a products-focused business model to a services-focused model. In the Entertainment and Media (E&M) industry, new business models are indicating the shift from physical ownership to subscription services. There is also a clear transition to a direct-to-consumer approach. The digital wave is taking over traditional formats of business, resulting in a gradual blurring of lines between media and technology companies. The Telecom sector is experiencing a shift from voice to data. As a result, traditional telecom players are continuously seeking new ways to reimagine the industry value chain and generate growth opportunities in an evolving industry rooted in core assets.

All these strides towards digital are impacted by a few market forces that will have a major bearing on the TMT industry in Europe over the coming years, creating further opportunities and challenges for TMT players.

Digital Single Market

The Digital Single Market (DSM) strategy adopted by the European Commission (EC) in 2015, aims to create a single market for the digital economy by removing regulatory restrictions between different EU countries. DSM is expected to unlock the potential of the European digital economy, by boosting EU cross-border online services. According to EC estimates, a fully implemented DSM system could contribute 415 billion euros per year² to the European economy.

Data protection and monetisation

In this increasingly digital world, no business is without cyber risk. For TMT companies in particular, this risk is greater as they hold vast amounts of customer data which is a primary target for many cyber-attacks. As TMT companies increasingly go digital and technology adoption rises, cyber risks are likely to intensify. Then there is also the question of individual data privacy, and the extent to which businesses would store, process and use consumer data. As individuals gain more control of their data and become more sensitive to their privacy, it will become increasingly challenging for digital companies to model businesses based on consumer data.

Talent scarcity

Talent scarcity in the tech space has been an ongoing concern. Yet, it is even more relevant in the current environment when disruptive technologies, such as artificial intelligence and robotics, demand new skills from the workforce. Companies recognise this – in PwC's 20th CEO survey, tech CEOs worldwide cite the availability of key skills as the number one threat to their growth prospects (80% say they are somewhat or extremely concerned about this). Estimates suggest a lack of up to 500,000 Information and Communication Technologies (ICT) professionals in Europe by 2020, which has the potential to derail some of the digital growth in the region.

Localisation

Localisation, or the increased focus of companies, regulators and customers on local preferences, has long been central to European markets due to their linguistic and cultural diversity. Localisation could have an impact on competition, as foreign players are less likely to be able to cater to specific geographical, language and cultural preferences.

² European Commission, https://ec.europa.eu/priorities/digital-single-market_en

Exploring major uncertainties

Questions to consider

- How will the technology, media and telecom value chains be impacted by the digital revolution?
- Will digital disruption impact the traditional definitions of the industry and dissolve industry borders and value chains?
- Will the effectiveness of assets as a basis of competitive advantage fade away with time?
- What will consumers value more – decades of experience in a particular value chain or a new and revolutionary service and business model?

Various factors are making it hard to predict the future of the TMT industry in Europe, some of which we discussed on the previous pages. Most of these factors have to do with the global shift towards digital offerings and ways to do business; and the response of companies and regulators to the digital revolution. Let us examine two key uncertainties that will have a profound impact on how TMT companies grow and compete over the next five years.

Future of industry value chains

Will the TMT industry value chains prevail?

Or will the boundaries of traditional industries blur, creating value webs?

Players rooted in digital, or “digital natives”, have left their mark on every segment and product line in the TMT industry. However, not every innovation has “disrupted” the industry fundamentally, since innovation can have different effects. Indeed, innovation can generate disruptive technologies that create entirely new value chains, but it can also follow established ways of value creation, where better digitised offerings are created while sustaining traditional industries.

Traditional industry value chains have been created over decades, and are rooted in the control of critical assets such as reliable telecom networks or content rights. While new ways of delivering the same value emerge regularly, they may not invalidate the traditional industry's value chains. This end of the spectrum can be called "incremental innovation", as it will cause only incremental improvements to an existing product or service.

At the other end of the spectrum, industries will be disrupted in an unprecedented way. Value chains will no longer follow traditional routes, as digital

would enable new and complex ways of creating value for customers. Digital natives will redefine how value is delivered causing unexpected parties to become competitors, and competitors to become partners. Sectors will converge to create larger ecosystems, led by players that influence multiple industries.

Innovation will continue to be the driving force for the TMT industry. How will it impact existing industries and value chains? Will the effectiveness of assets as a basis of competitive advantage fade away, with new ecosystems dominating the world? Or will the familiar reinvent itself?



Questions to consider

- Will governments in Europe increasingly look inwards when framing policies impacting TMT businesses?
- Will EU strategies like DSM create a policy environment that stimulates businesses within EU, while hindering players from other regions?
- What will be the impact of the regulatory environment on the innovation momentum in Europe?
- How will incumbent TMT players be impacted by this?

“According to the PwC CEO survey, 58% of CEOs believe it’s already becoming harder to compete on the world stage as a result of more closed national policies.”

Future of policies and regulations

Will regional protectionism gain strength?

Or will a new wave of globalisation rise?

Globalisation in its first phase (from the 1980s to the mid-2000s) was characterised by a rise in global trade flows. Since then, globalisation has taken on a new meaning – it is now characterised by increasing flows of data and information, which encourages companies to innovate and enables them to enter into foreign markets.

However, the future is uncertain. The UK referendum on EU membership in June 2016 and the US presidential election in November 2016 exposed deep divisions among voters and revealed the extent of discontent over job losses and growing inequality. This might also be indicative of an increasing hostility towards globalisation, pushing governments to start looking inwards. If this trend was to continue, a protectionist environment might affect various national policies. According to the PwC CEO survey, 58% of CEOs believe it’s already becoming harder to compete on the world stage as a result of more closed national policies. The situation is particularly uncertain in the EU, with the Brexit vote expected to restrict trade flows with the UK. It could also restrict free movement of labour, which will have a detrimental effect on fast growing tech firms.

Protectionism could manifest in various ways – creating physical boundaries restricting international trade and talent flows or creating virtual boundaries restricting the flow of technology, data and content on which digital businesses depend. Calls for data sovereignty may include measures that require data to be processed and stored within national borders, which will be detrimental to data driven businesses. Such restrictions would not only impede the operations of companies from other regions, but could also dampen innovation in the region, and deter investment.

What makes these developments an uncertainty is that various forces are acting in opposing ways. Some forces are linking the world more closely together, while others are causing rifts that go against the vision of a globalised world. Rise in digital connectivity is an example of the former, while Brexit could be seen be an example of the latter. The forces of technology will continue to transform the world. But in which direction? Are we entering an age of protectionism – or will globalisation receive a new impulse with a little help from digital technology?

Scenarios uncovered by the uncertainties

The two uncertainties will give rise to four extreme scenarios, which could play out in the medium to long-term future. Which future scenario applies to a specific company, strongly depends on the developments in the industry (represented by the continuum of the horizontal axis) and the developments in the regulatory landscape (represented by the continuum of the vertical axis).

Companies will not only be affected by these scenarios, but will also have an active role to play in determining how the axes play out. They will be the innovators moving the scale towards either end of the horizontal axis, and will have a voice in determining the regulatory stance of the vertical axis.

In the next five to ten years, who will dominate your business?



Global industry champions

- Global TMT leaders with uncontested assets increase competition, and emerge dominant in national markets in Europe
- Competition is based on cost and efficiency, and ability to exploit core industry strengths
- Competition pushes global and regional players towards innovative offerings within traditional business
- Regional players benefit from niche offerings designed to local preferences, and customer reach
- Increased mergers and acquisitions, as global champions attempt to gain regional strengths

Globalisation strengthened

Industry value chain prevails



In this future scenario, TMT companies will focus on their core industry strengths in the face of digital disruption. While new technologies and business models develop, traditional players will turn to their core assets such as access to technology, networks or content, for a growth push. From a regulatory perspective, entry barriers will reduce, allowing companies from other regions to expand uninhibitedly into different regional markets within Europe. This will cause large-scale competition for regional companies, who could struggle to retain market share. The possible reasons for the loss of market share could vary from a lack of technology or assets to high cost of production. Companies that are able to maintain control over their core assets and preserve their core value propositions will emerge as the industry leaders in Europe according to this scenario for the future.

While this scenario is characterised by the coexistence of both local players and players from other regions, it is possible that larger multinational players will dominate the European market in the longer run. A well-known example of this situation is the mobile devices industry where Apple and Samsung are the worldwide industry leaders. The challenges of global competition could be amplified in a short period of time if global market leaders monopolise product innovation. They will be able to capture greater market shares through their innovative products and services, that are backed by reliable customer service. Economies of scale also play to the benefit of global leaders by bringing down costs.

One of the biggest challenges faced by global giants in this scenario will be the lack of local market understanding and expertise. As a result, this scenario could lead to a rise in mergers and acquisitions activity, as global giants acquire regional players to increase their presence in local markets. On the other hand, regional leaders will have to invest heavily in research and development to be able to retain market share.

Take for instance the software industry. Competition from global players has already become a reality because developers are not location dependent for their operations and distribution. The local advantages of regional players are not enough to create global leadership positions in an industry where relatively young companies are quickly gaining market share. Looking closer into the cloud computing market of Europe, global leaders like IBM, Amazon, Microsoft and Salesforce are dominant. Regional players, like Orange SA, are also active, but they fail to gain leading positions in the market. A similar situation exists for players like Exact Software operating in the cloud business software space, but could also become active in other industries like telecom or entertainment.

Questions to consider

- Will you be able to be the scenario leader by becoming a “Global Champion”?
- Are your core industry strengths strong enough to stand in the face of digital disruption?
- How will you preserve your core value propositions?
- Do you have the resources to compete with potentially larger global competitors?
- What will be your differentiator when subjected to competition from global companies?
- Will you be able to cope with high pressure on margins?

How to become a winner in this scenario

Regional TMT companies should increase their emphasis on a regional strategy in order to compete with global companies entering the regional market. Customer reach and offerings designed for local preferences, language and culture could be the differentiator that allows local companies to retain market share. Regional emphasis could be increased by focusing on owning local content and data, and using this to help drive market share in that region. Companies should also attempt to increase and strengthen their core industry assets to compete with global majors. While keeping focus on core strengths, it will be important not to lose sight of digital innovations that keep value propositions relevant in the time of disruption by digital developments.

A big challenge for European companies in this scenario will be to have continued access to key talent. Shortage of technology talent is already emerging as a concern in the EU, where all Member States except Finland suffer from a shortage of ICT professionals.



Global digital giants



In this future scenario large digital companies will emerge, with business offerings that are not restricted to any particular industry, value chain or geographic region. These global digital giants will be companies with unrivalled digital resources, allowing them to continuously innovate and expand into every viable opportunity that comes their way.

We recognise the “Big Five”: Alphabet (Google), Apple, Facebook, Amazon and Microsoft as global digital giants. Exponential growth for such ‘super competitor’ companies is facilitated by a number of forces that drive consolidation in the digital ecosystem. Firstly, the network economies effect increases the value of services provided by companies with a large network

of users. Globalisation and technology reduces international entry barriers for digital players. In addition, the market rewards companies with the ownership of platforms and big data. All these factors will contribute to a further strengthening of the goliaths of the digital world.

Large digital players have already caused disruption in the TMT industry. Over-the-top (OTT) players, which offer apps and streaming content directly to consumers through the Internet, have increased their dominance, even in core communication services such as messaging and voice. However, this disruption is not limited to the telecom sector. Digital giants are dissolving industry barriers to enter not just TMT, but also other unrelated areas like travel, finance, automotive, retail or healthcare. For this trend to continue and this scenario to become a reality, these digital giants will have to continue to innovate and dissolve industry and value chain boundaries. Imagine a scenario where these companies take the lead in every area that TMT companies operate in, with comparable or better offerings and wider customer reach. They will be very active in the M&A space as they build an ecosystem of innovative start-ups around their businesses. Traditional players will continue to operate, but their influence and market share will be considerably reduced.

In this scenario, digital giants will not face significant regional restrictions. The digital business environment will be highly globalised, without restrictions on companies operating in any particular region. As in the current environment, comparatively minor altercations with regulators will continue to be common, but they will not cause serious impediments to the business of digital giants. For example, in the recent past Google has been fined in France for failing to remove “right-to-be-forgotten” requests from global search results. The issue of storing personal data of EU citizens in the US has also been the source of contention. But none of these restrictions have been detrimental to the company’s operations in Europe.

Questions to consider

- Do you have the resources and capabilities to be one of the “digital giants”? What role will you play in this scenario?
- In a completely digital world, what value will your core industry assets have?
- How will you differentiate yourself faced with competition from large digital companies?
- How can you redesign your value propositions?
- Do you have sufficient digital assets and workforce to compete in this scenario?
- Should you explore partnership opportunities with other digital majors, in order to succeed?

Nonetheless, privacy and cybersecurity will remain important factors and a single security breach could impact a large number of people and have a disastrous impact on the company involved. Digital giants will have to be careful while managing these, as they will typically own large volumes of consumer data. Only companies that are able to retain customer trust will be able to retain the high market value and market share across industries, and emerge as a “global digital giant”.

How to become a winner in this scenario

In a scenario where any business could be impacted by global digital companies, it will be important for traditional TMT companies to continually invest in developing new digital capabilities and create their own niches. While developing digital capabilities they must also keep focus on growing industry strengths, particularly strengths that enable widespread customer reach, as this would be a coveted asset in the digital age.

Digital giants have a dual strategy of either acquiring companies or entering into partnerships with them to build an ecosystem. Traditional TMT companies should increase their focus on traditional assets, which will allow them to collaborate with digital giants on their platforms and offerings.

Regional players will need to be keenly aware of local regulations and preferences that can enable them to create their unique value propositions. Local strengths will help them compete with global giants on a regional basis, by acquiring customer loyalty.



Regional digital leaders



Rise of regional protectionism

Industries blurred, value webs created

- Regional digital companies modify business models to compete with global giants
- Start-ups and new entrants provide additional push to innovation
- Regional partnerships and networks will be created, as companies attempt to gain capabilities relevant to multiple different industries and value chains
- Protectionist policies support local innovation, while global majors struggle with compliance issues
- Innovation will still be inhibited due to low competition from global digital companies

In this scenario, digital disruption will transcend traditional industry and value chain borders. New products and services categories will be created, as innovative products and services will breach traditional industry definitions. As a result, companies will no longer be classifiable into standard industry segments.

A number of companies in Europe have started altering their offerings and business models to disrupt adjacent or entirely unrelated industries. For instance, in the entertainment and media space, cable operator Ziggo (now VodafoneZiggo) is producing sports content, and Amazon, a traditionally e-commerce and cloud computing company, is offering its own streaming services. Telecom players are also introducing offerings that impact previously unrelated industries.

KPN is focusing on providing ICT services while also launching the LoRa network, which will affect diverse IoT applications such as airport baggage handling. Another telecom player, Swisscom, partnered with Ringier (a media company) and SRG (a broadcasting association) to form Admeira – a marketing company that builds and deploys innovative advertising forms by combining technology, data analysis and marketing expertise. Such business model changes, mark the starting point for turning this scenario into reality. As regional players start innovating and entering into the digital world more and more, there will be some that will emerge as “regional digital leaders”.

The music industry is a good example of how digital disruption completely transformed traditional business models. A new category of on-demand music streaming was formed, with innovators like Spotify and Apple still changing the industry, bringing in the era of paid subscription music. Industry borders blur as the music streaming business merges into other types of content, like video streaming.

As players increasingly become digital, there is very little to limit the global reach of these players, except for regional protectionism, which is definitely a rising trend in the current environment. Various factors could lead to players being limited to specific regions or countries, such as, the challenges of achieving scale in new regions, privacy legislation, and a lack of content to match local tastes or the nature of business. An example of a regulatory restriction due to the nature of business is telecom operator Telefónica which launched the O2 banking app in Germany. The O2 banking service was launched in association with the direct bank Fidor as a banking license is required to operate in Germany.

Questions to consider

- Are you ready to be a “regional digital leader”?
- Are you ready to invest heavily in innovation? Do you have the resources and capabilities required?
- Have you created a company culture that encourages innovation and entrepreneurship?
- How will you keep a focus on your core business while the industry is changing?
- How will you develop a model that can be flexible enough to apply to changing business models?
- How will you manage the challenges of the business going digital, like managing consumer privacy and ensuring security?

Business model innovations and collaborations to enter new industries signal exciting times for TMT companies, however, companies will need to be aware of regulations that apply to their new ventures. They might not have the necessary experience or resources to succeed in unfamiliar territory, and will need to invest heavily in developing resources, innovating and gaining access to key talent to be able to achieve the status of “regional digital leaders”.

How to become a winner in this scenario

In order to become a winner in this scenario, regional companies will have to step up their innovation activities. They could also consider aligning themselves with global digital majors, in order to be the first to bring emerging offerings to the region. Players could also be on the lookout for acquiring start-ups or entering into a partnership with them to acquire valuable digital capabilities.

Since value chains and industry definitions will continue to get disrupted, companies should link their strategies to value chains that bring high value to economic growth in the region. For example, if the region is highly dependent on the automotive sector for growth, it could align its strategies to develop new value chains and offerings that could cater to the automotive sector in the future, directly or indirectly.



Regional industry champions

Industry value chain prevails

- Regional companies with specific industry assets are strengthened, and regional monopolies are created across the value chain
- Global leaders face the pressure of protectionist policies
- Start-ups and new business models are able to enter the market, but need to develop core assets to gain scale
- Overall, more expensive for consumers and society, as there is lower efficiency in the system, and incumbents retain higher margins
- Creates better employment opportunities within the region



Rise of regional protectionism

In this scenario traditional industry leaders within each region will continue to dominate the TMT industry, even in the wake of digital disruption. The transformation caused by the digital wave will alter the industry, but traditional leaders will be able to persist on the strength of their core assets, such as infrastructure assets, digital technologies, network, data and content, brand, control over distribution channels or access to users.

This does not mean that traditional players will not be at all impacted by the disruption. Regional leaders will need to retain their position in the changing industry by following a path of incremental innovation, improving their products and services, growing digital capabilities, or acquiring companies

to add to their digital war chest. This is already beginning to happen in some segments. Look for instance at the impact of streaming services on the traditional pay-TV business. The pay-TV players were initially slow to react, but they are taking the fight back to the subscription video on demand (SVOD) entrants. Players are now offering their content in smaller bundles to non-subscribers, making it accessible as an integrated, cross-device user experience across TV, laptop, tablet, and smartphone. A good example of such a strategy is Sky's Now TV stand-alone streaming service in the UK, which it offers alongside a separate streaming capability for subscribers to its main pay-TV offering. The realisation of this scenario depends on traditional players exploiting their industry-specific assets, which in the case of NowTV was its content and subscriber access.

The forces of protectionism will also have a vital role to play in this scenario. Take Netflix for example. While it is a global force in the entertainment industry, driving local players out of business in some markets, there are countries, such as China, where Netflix is not active due to regulatory impediments and business factors. China is one of the world's fastest-growing video-on-demand markets and has various local video streaming providers that are seeing healthy growth rates and could become "regional industry champions", supported through regulatory protectionism. In effect, regional restrictions do not only come from protectionist policies and regulations. Even if Netflix were to launch in China, it would be faced with the challenge of forging local content relationships making it very hard to be successful.

Protectionist policies that exclude companies from doing business in certain countries might seem extreme, but regulations that benefit some businesses and restrict others become realities far more easily. For instance, the EU is extending digital privacy requirements to OTT and other web-based services, as previously applicable to telcos. Unlike telcos, OTT and web services leaders

Questions to consider

- Will your traditional offerings be enough to retain or gain a regional industry leader position?
- How will you redesign the offerings and assets of the company to stay relevant?
- Do you have resources to pursue expansion of capabilities, organically or through acquisitions?
- What core assets will act as your differentiators?

are mostly global players (e.g. WhatsApp), who will now be required to comply with additional regulations under the proposed Regulation on Privacy and Electronic Communications.

Overall, this scenario will have a positive impact on local job markets as regional businesses will get a boost. Incumbents and new entrants will drive innovation and increase M&A activity to grow their capabilities and offerings, to everyone's advantage.

How to become a winner in this scenario

To keep growing in this scenario TMT companies must continually invest in core assets, and modernise operations. The core assets will continue to act as differentiators for the incumbents, but will need to be developed and updated so that they stay relevant in the changing industry and customer demands. Additionally, regional players' knowledge of local markets and customer preferences, and ability to be compliant with local regulations will add to their strengths.

Companies will have to consistently improve offerings and adopt new business models, to keep growing in a digitised world and avoid being commoditised. Regional players must be keenly aware of global trends, and will need to be at the forefront of product innovation to retain their position as leaders. To move towards an innovative identity, companies might need to address organisational complexity and workforce and cultural issues.



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