



DELL Technologies



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The Digital Corporation in South Africa 2021

A study conducted by World Wide Worx

In partnership with SYSPRO, Dell Technologies, Intel and Cycan

Contents

Executive Summary	5
Forewords	7
Greg McDonald, director of systems engineering at Dell Technologies, South Africa.....	7
Bryan Hattingh, CEO of Cyscan.....	9
Deirdre Fryer, head of solutions engineering, SYSPRO EMEA.....	10
Demographics	11
Gender.....	11
Province.....	11
Capital City	12
Industry	13
Job title	14
Employee count.....	15
Annual turnover	15
General data	16
Level of digital transformation	16
Level of digital transformation – split between manufacturing and non-manufacturing	16
How digital transformation changed after a year of lockdowns.....	17
How digital transformation changed after a year of lockdowns – split between manufacturing and non-manufacturing.....	17
How revenue has changed since the start of the pandemic	18
How revenue has changed since the start of the pandemic – split between manufacturing and non-manufacturing.....	18
Proportion of staff working remotely since lockdowns started	19
Proportion of staff working remotely since lockdowns started – split between manufacturing and non-manufacturing.....	19
Reasons for only a few staff members being able to work remotely.....	20
Reasons for only a few staff members being able to work remotely – split between manufacturing and non-manufacturing.....	20
In the future, what proportion of staff do you expect to fully return to the company’s offices?	21
In the future, what proportion of staff do you expect to fully return to the company’s offices – split between manufacturing and non-manufacturing	21
How often are remote working employees expected to be available	22
How often are remote working employees expected to be available – split between manufacturing and non-manufacturing.....	22
Did you have an eCommerce facility in place before the Covid-19 pandemic?.....	23
Did you have an eCommerce facility in place before the Covid-19 pandemic – split by manufacturing and non-manufacturing.....	23
If no, did the pandemic result in you planning to adopt an eCommerce platform?	24
If no, did the pandemic result in you planning to adopt an eCommerce platform – Split by manufacturing and non-manufacturing.....	24
If yes, did the pandemic accelerate your eCommerce adoption?	25

If yes, did the pandemic accelerate your eCommerce adoption – Split by manufacturing and non-manufacturing	25
Which of these ecommerce solutions do you use for your business?	26
Which of these ecommerce solutions do you use for your business – Split by manufacturing and non-manufacturing	26
Since the lockdown started, how has your investment in ICT changed?	27
Since the lockdown started, how has your investment in ICT changed – Split by manufacturing and non-manufacturing	27
Where is the greatest emphasis of your IT investment?	28
Where is the greatest emphasis of your IT investment – Split by manufacturing and non-manufacturing	28
Key areas of ICT expenditure.....	29
Key areas of ICT expenditure – Split by manufacturing and non-manufacturing	30
Plans to upgrade hardware/software.....	31
Which of the following challenges poses a hindrance to any upgrading plans?	32
Does your company currently have any Enterprise Resource Planning (ERP) systems installed? .	33
Does your company currently have any Enterprise Resource Planning (ERP) systems installed? – Split by manufacturing and non-manufacturing	33
If you consider your most recent automation project (however small), what were the key desirable objectives?	34
If you consider your most recent automation project (however small), what were the key desirable objectives – Split by manufacturing and non-manufacturing	35
Are these technologies important in your budgeting priorities?	36
Are these technologies important in your budgeting priorities? – Split by manufacturing and non-manufacturing	37
Overall importance of general mobile access requirements	38
Important factors in selecting a technology	49
Important factors in selecting a technology – Split by manufacturing and non-manufacturing	50
Which form of connectivity do you use?.....	51
Which form of connectivity do you use – Split by manufacturing and non-manufacturing	52
Which business applications/solutions do you use?	53
Which business applications/solutions do you use – Split by manufacturing and non-manufacturing	54
How many people have access to the Internet through your corporate network?	55
For which of the following purposes do they use this Internet access?	56
For which of the following purposes do they use this Internet access – Split by manufacturing and non-manufacturing	57
Describe your existing use of basic mobile technologies, like smartphones and laptop computers.	58
In a normal working week, how often are your company's employees away from their desks, PC, or normal place of work?	59
Essential software to the company.....	60
Essential software to the company– Split by manufacturing and non-manufacturing.....	60
Manufacturing Specific Questions	61

Overall significance of perceived barriers of implementing ICT in manufacturing	61
Overall significance of ICT benefits and opportunities in manufacturing	72
Overall significance of minimising ICT barriers in manufacturing/production	81
Digital Corporation – Crosstabs	90
Digital transformation across industries	90
How digital transformation affects revenue changes	95
How digital transformation affects remote work since the pandemic	100
How digital transformation will remote work after the pandemic	104
How changes in ICT investment affected digital transformation since lockdown.....	108

Executive Summary

South African enterprises took a step backward in digital transformation over the first year of the pandemic, as disruptions, lockdowns and staff unable to maintain operations remotely slowed down roll-out of new systems at head offices.

This is one of the startling findings of the Digital Corporation in South Africa 2021 research study, conducted by World Wide Worx with the support of Syspro, Dell Technologies, Intel and Cyscan. The slow-down came despite expectations that remote working would accelerate digital transformation, due to the demands it placed on companies to be able to operate digitally.

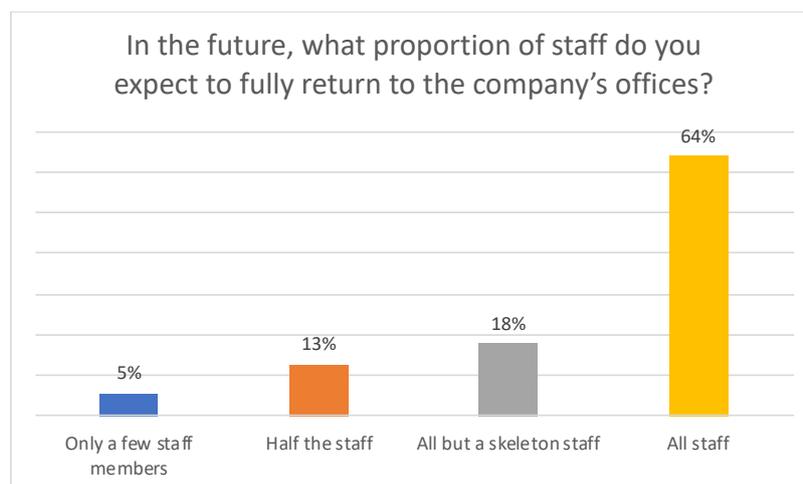
As many as two thirds of respondents said they had gone backwards in digital transformation, an indication that the pandemic slowed efforts to digitalise organisations. While many of these had slowed only a little, one in five, or 20%, said the fall had been significant. This, in turn, hampered their efforts to create an efficient remote workforce, with almost the same proportion – 24% – saying they had only a few staff members working remotely throughout the year.

On the other hand, the proportion of companies that increased their levels of digital transformation over the first year of the pandemic, 15%, is close the proportion of those who had all staff working remotely – 18% – over this period.

Almost two thirds (64%) of South African enterprises expect all staff to make a full return to the workplace, with fewer than one in five (18%) expecting to accommodate half or less.

This means, while the world of work will be utterly changed, there is no unanimity about work-from-home being the new norm.

This is good news for the commercial property industry as well as infrastructure providers, who will be tasked with equipping organisations for a more flexible future.



The further surprising statistic was the proportion of companies that expect staff to be on call whenever needed: one third of respondents. A relatively small 12% of respondents expected 14/7 availability, but another 22% want staff available on an ad hoc basis at any time the company requires them outside office hours.

“While companies have almost unanimously embarked on a digital transformation journey, the majority of workforces have had to adapt to Covid-19, with the transition to remote working impacting efforts to

digitalise organisations,” says Deirdre Fryer, head of solutions engineering for SYSPRO in Europe, Middle East and Africa.

Despite the slowed pace of digital transformation, only 8% of respondents decreased their spending on IT, and almost half increased this spending. This can largely be seen as a response to remote working, and equipping staff to work from home, rather than for transforming processes.

“Remote working needs a digital sauce,” says Bryan Hattingh, CEO of leadership trainers Cycan. “It is not only that the digital medium is essential for working flexibly, but also that it allows greater innovation in leadership. That needs, among other, investment in innovative processes.”

Where is the spending going?

“Spending is surprisingly uniform across numerous operational categories, from computers and cybersecurity to accounting and ecommerce,” says Arthur Goldstuck, CEO of World Wide Worx and principal analyst on the project. “However, in terms of budgeting priorities for specific technologies, one category stands out above the rest, namely connectivity. That tells you almost everything you need to know about the information worker during the pandemic.”

While some operational categories of IT spending were at the bottom of the list, none was cited by less than 62% of respondents

The research provides the clearest picture yet of the role played by the fourth industrial revolution in the South African corporation. While cloud computing is second only to business intelligence in terms of budgeting for specific technologies, the technologies usually associated with 4IR occupy the foot of the priority table.

Says Fryer: “Emerging technologies such as artificial intelligence, machine learning, big data, and robotics are yet to become top budgeting priorities. However, what is a positive trend is that we are seeing IT spend being allocated to almost every aspect of the business and operations, laying a solid foundation for future transformation.”

Greg McDonald, director of systems engineering at Dell Technologies, South Africa, confirms that technology has served as an enabler to remote work since the onset of the pandemic.

“While most companies have embarked on some sort of digital transformation pre-pandemic, efforts to digitalise slowed with the need to focus on remote working set-ups with connectivity standing out as a priority,” he says. “However, there is a direct correlation between how transformed an organisation is and how equipped it is to facilitate remote work. The Fourth Industrial Revolution is here, and budgeting priorities show how organisations are mobilising in response to this with business intelligence, cloud computing and software-as-a-service at the top of the spending list.”

One of the most fascinating findings of the research is that, despite the economic slump of the past year, the price of IT products is still not the most important factor in purchasing decisions, although it comes close.

The top three factors are Quality of product or service, Maintenance and after-sales service, and Price. While the latter has never topped the list in World Wide Worx research, it has always been part of what Goldstuck calls “the IT golden triangle of Quality, Service and Price”.

However, of 15 purchasing factors measured, none was cited by fewer than 75% of respondents.

“This reveals that companies have become far more demanding,” says Goldstuck. “Factors like Relationship and Future-proof of solutions (each 86%) indicate a more discerning customer, and the full set of criteria becomes almost a rule book for IT providers. The new normal is not only about providing for digital and mobile needs, then, but also about servicing a new kind of corporate customer.”

Forewords

Greg McDonald, director of systems engineering at Dell Technologies, South Africa

The changes we are seeing in the world of work in South Africa are aligned to a need for a work-from-anywhere strategy, facilitated through connectivity – an immediate requirement during the pandemic. This need superseded the need to transform at the beginning of the pandemic, slowing digitisation initiatives in organisations.

However, the speed at which organisations were able to pivot into remote working where directly associated with how transformed organisations were to start off with.

While organisations have embarked and progressed in certain aspects of their Digital Transformation journey, the more transformed they were at the onset of the pandemic, the more easily they were able to transition to a remote working organisation.

Interestingly post pandemic, as many as two thirds of South African organisations foresee staff returning to physical places of work – this differs to the current trend we are seeing in Europe and America as they emerge from the pandemic with faster rates of vaccination roll out as well as having been hit by the pandemic before South Africa.

Conversely e-commerce is on the rise in response to the pandemic. This could be viewed as almost contradictory to getting staff back into physical office spaces. As many as two thirds of companies use ecommerce platforms for selling and half use ecommerce platforms to buy from other businesses and a quarter buy on consumer sites. Case in point, Dell Technologies pivoted to engage customers through virtual interactions.

Looking to ICT investment, procurement and budgeting, despite the somewhat slowed pace of digital transformation only 8% of respondents reduced their ICT spending, and half or 50% have increased their spending. The 'what' of spending is important here and most investments have been made to respond to remote work, with connectivity standing out. Nonetheless, no single category of spending was less than 62%, so spending is being done with a view to better every aspect of the organisation and incumbent operations. This indicates that even if digitisation has slowed, the digital building blocks are being put in place for future Digital Transformation efforts. Situational aspects can change the course or focus of digitisation, however the process as a whole should be an end goal and an aspirant level of optimal work for organisations, employees and their respective customers.

Digital Transformation is still an end goal, the building blocks of which are being put in place currently. Those who are prepared to adapt and change will be in a position to do so quickly. Those who are not – will return to similar ways of working – and may not be best placed to seize the opportunities we will see in the new way of working. With mobile solutions clearly a budgetary priority, for clear reasons in the pandemic, one should keep an eye on emerging technologies such as 5G and how this, in tandem to mobile solutions could shape the future.

With the 'premature' or accelerated arrival of the Fourth Industrial Revolution (4IR), budget priorities stem around Business Intelligence, Cloud Computing, Software-As-A-Service and the Internet of Things (IoT). All of this points toward aligning business and IT with a data first culture, using data to achieve success and growth. Cloud Services offer integrated compute, storage, networking, and virtualisation resources that enable consistent, secure infrastructure and operations for workloads across public and private clouds, helping customers realise their digital future by safely navigating the complex and often fragmented IoT landscape.

The IoT is changing how we live, how organisations operate and how the world works. New distributed computing architecture brings IoT and Artificial Intelligence together in one interdependent ecosystem from the edge to the core to the cloud. All of these and other emerging technologies like AI will have a profound impact on the society we live in.

Looking to the future while companies will vary in what they define as their 'new normal' the fact of the matter remains that organisations are discerning in the ICT requirements including their expectations of suppliers; expecting a package of criteria from suppliers which have not changed much over a long period of time, with the quality of the product, service and maintenance and after sales service being key deliverables.

The future is exciting and post pandemic South Africa will see a mix of organisations returning to the way they were operating and picking up with their transformation efforts and others finding a new way of working continuing from the remote way of work that we saw as a result of the pandemic. Either way, digital transformation is a priority and the extent to which organisations are transformed will determine how they forge forward in the new technology enabled and driven world.

Bryan Hattingh, CEO of Cygan

The fourth industrial revolution had its origins in 2016, in what was already a rapidly emerging exponential world. With it came prospects of amazing innovation, creative disruption, and an ability for mankind to greatly accelerate into new realms of capability.

Digitisation, digitalisation, robotics, IOT, artificial intelligence, quantum computing and 3D printing are positioned to rapidly enable mankind to do things in increasingly accelerated and impactful ways. The customer experience and organisational form set to change forever

This was happening - both covertly and overtly - with many organisations being partly, and in some cases, fully oblivious to the rapid emergence to the new digital economy and a digitalised world.

The arrival of COVID created a massive step change in the rate of shift and disruption. People who had never worked remotely now had to. Organisations that were so accustomed to doing things in a certain manner, now had to do it differently. Leaders and managers were called to galvanise and direct their teams in a way they had never previously been prepared for, or even conceived.

Mixed blessings for some, whilst for others it was daunting and the human-to-human touch that people have a natural affinity for, was not possible for an indeterminate time.

We have to see the collateral beauty of the pandemic and also look to see the positives that the framework of the new digital economy offers.

In spite of all the amazing features and capabilities of 4IR and the realm of digitalisation, the effectiveness and positive impact of this depends heavily on how each individual, collective communities and groups, and most importantly businesses, are able to engage it, embrace it, leverage it and adapt their behaviours to maximise the potential benefits.

To this end leadership is critical. As 4IR emerged, so did the concept and need for exponential leaders at all levels. This was regardless of whether or not they were managers of people.

The call was for people at all levels to be effective leaders of self before being leaders of others and of organisations. The world was calling for agile, resilient, authentic and innovative leadership which in turn necessitated elevated levels of self-awareness, presence and consciousness being developed.

Traditional autocratic leadership was rapidly becoming obsolete, pre-empting the move to a transformational and coaching style of leadership. The increasing emergence of millennial and centennial workers greatly exacerbated the demand for this new leadership.

We are all being called to frequently change the lenses that we look at life and the world of work and to develop curiosity as a key asset. Simultaneously we must discover new depths of courage, accountability with the willingness to continually learn and unlearn.

Empathy, compassion, and a sensitivity to the imperative of each of us being good global citizens are non-negotiable. The 4IR rocket ship of digitization and digitalisation is in flight and it is imperative that we navigate and pilot it in a way that positively impacts and adds value to the world.

Let us frequently ask ourselves the question "What are Life and the World asking of us right now?" and "What are we doing that our grandchildren will be proud of?"

Deirdre Fryer, head of solutions engineering, SYSPRO EMEA

I am pleased to introduce this year's annual report, which illustrates World Wide Worx with the support of SYSPRO, Dell Technologies, Intel and Cycan shared commitment to understanding the digital corporations of South Africa.

Rapid advancements in technology are affecting all our lives and it is fascinating to see how organisations of all sizes and industries are responding to the challenges that have arisen due to COVID-19. Exploring how these changes have impacted the businesses can help people understand how organisations can embrace their digital transformation and what parts of these changes will likely be here to last.

When COVID-19 struck, it forced societal changes around the globe. Within South Africa, nearly overnight governments issued orders that limited large gatherings of people, restricted in-person business operations. Children with internet access began attending class remotely, many employees started working from home and corporations adopted digital business models to maintain operations and preserve some revenue flows. The COVID-19 pandemic demonstrated the critical role of technology in helping businesses, citizens and societies adapt.

Along with the general slowdown in IT investment were widespread reports about how the COVID-19 pandemic halted digital transformation. The impact of COVID-19 was felt everywhere, and the world of IT, and its budgets, was certainly not spared.

Even prior to the pandemic, technology had become an increasingly important part of the workforce. Organisational outcomes were shaped by pre-pandemic decisions and investments—and COVID-19 itself changed digital and business priorities.

Businesses were looking at technology as a helpful means of engaging with customers, allowing some workplace flexibility, and for a way to introduce automation and faster processes. Two years ago, relatively few executives considered competencies in cloud computing, business intelligence, artificial intelligence, machine learning, big data, virtual reality, blockchain and robotics.

During the pandemic, consumers have moved dramatically toward online channels, and companies and industries have responded in turn. To assess the impact, the study tracked the rate at which the Fourth Industrial Revolution (4IR) tools were used by various institutions during the COVID-19 lockdown. The survey covered over 400 decision-makers within South Africa and focused largely on the impact of COVID-19 on digital infrastructure plans.

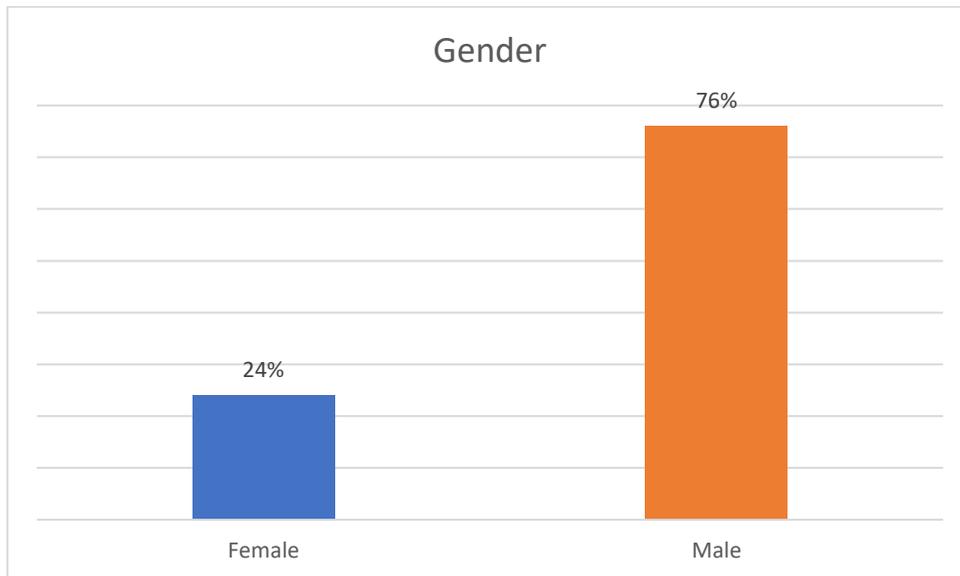
Today, leaders are expecting more from their transformation initiatives. Whether reflecting on current conditions or future, business leaders' needs for speed and flexibility have been amplified dramatically.

The impact of transformation is broad, affecting how businesses serve customers and enable employees, employ and develop technology, respond to disruptive market forces and create disruption of their own.

Regardless of how the crisis and its aftermath unfold, there is no doubt that digital technologies will continue to transform the way we live and work. The question now is how to carry forward the best lessons from this rapid process.

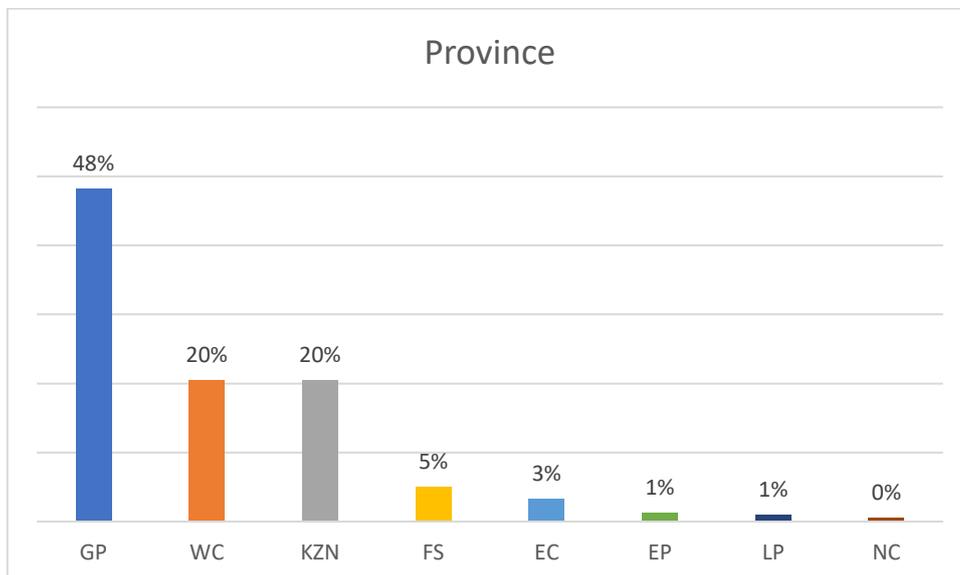
Demographics

Gender



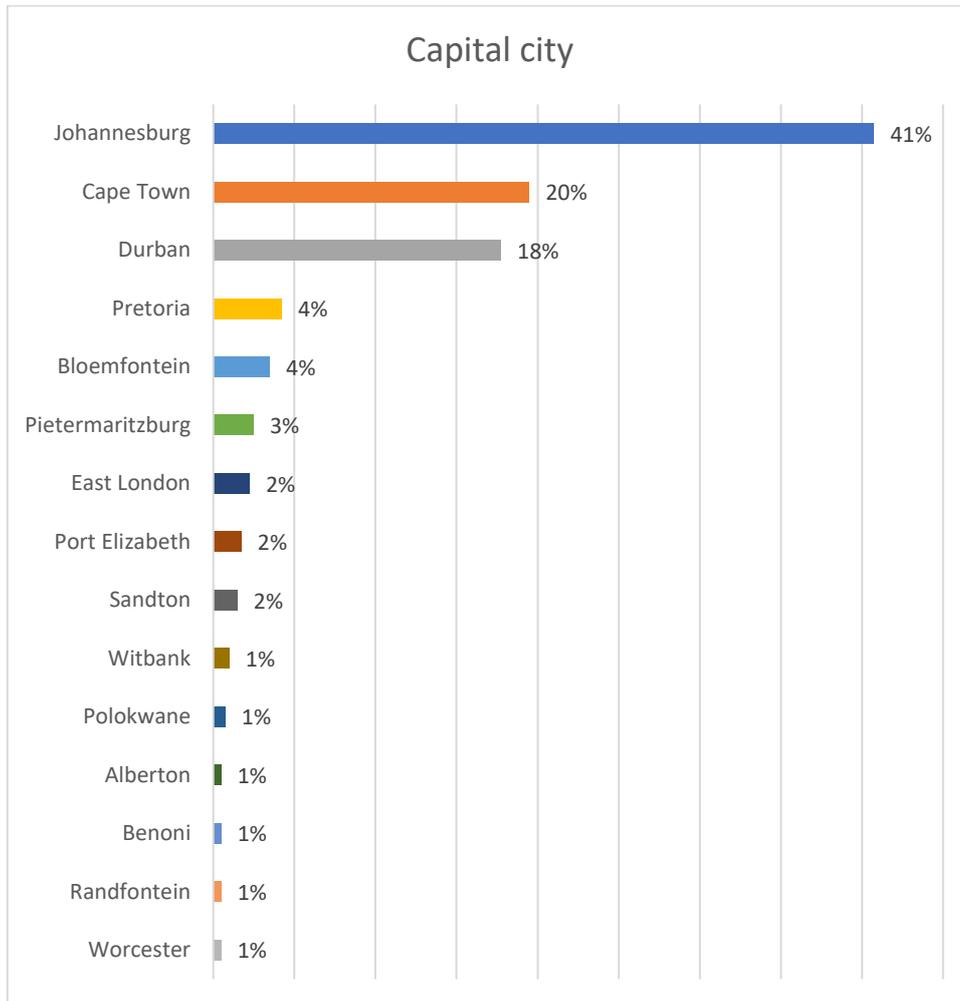
Just over three quarters of respondents reported they were male, while the remaining quarter reported they were female. No respondents preferred not to answer this question.

Province



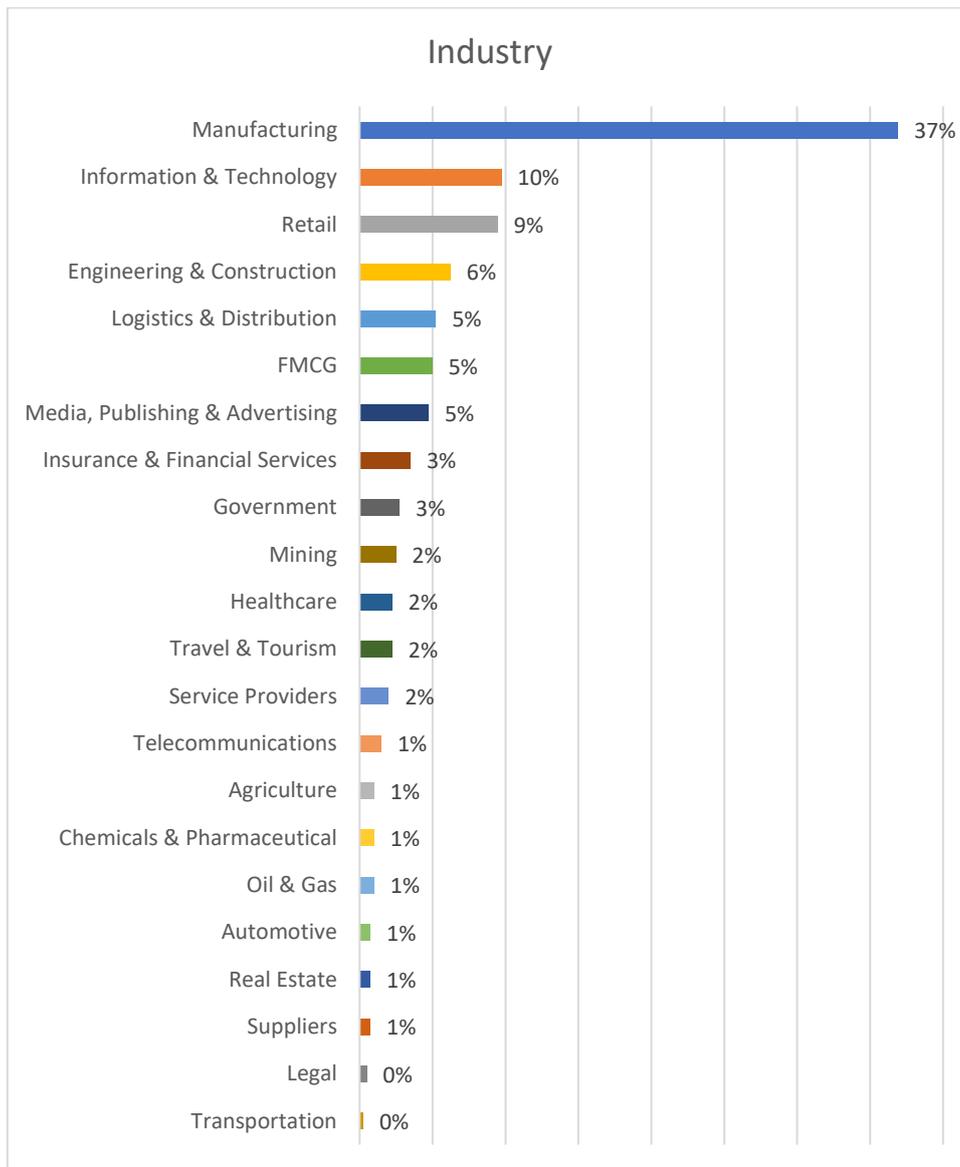
Most businesses were situated in the main business centres, almost half (48%) of the respondents were from Gauteng, while one fifth was from the Western Cape, another from KwaZulu-Natal.

Capital City



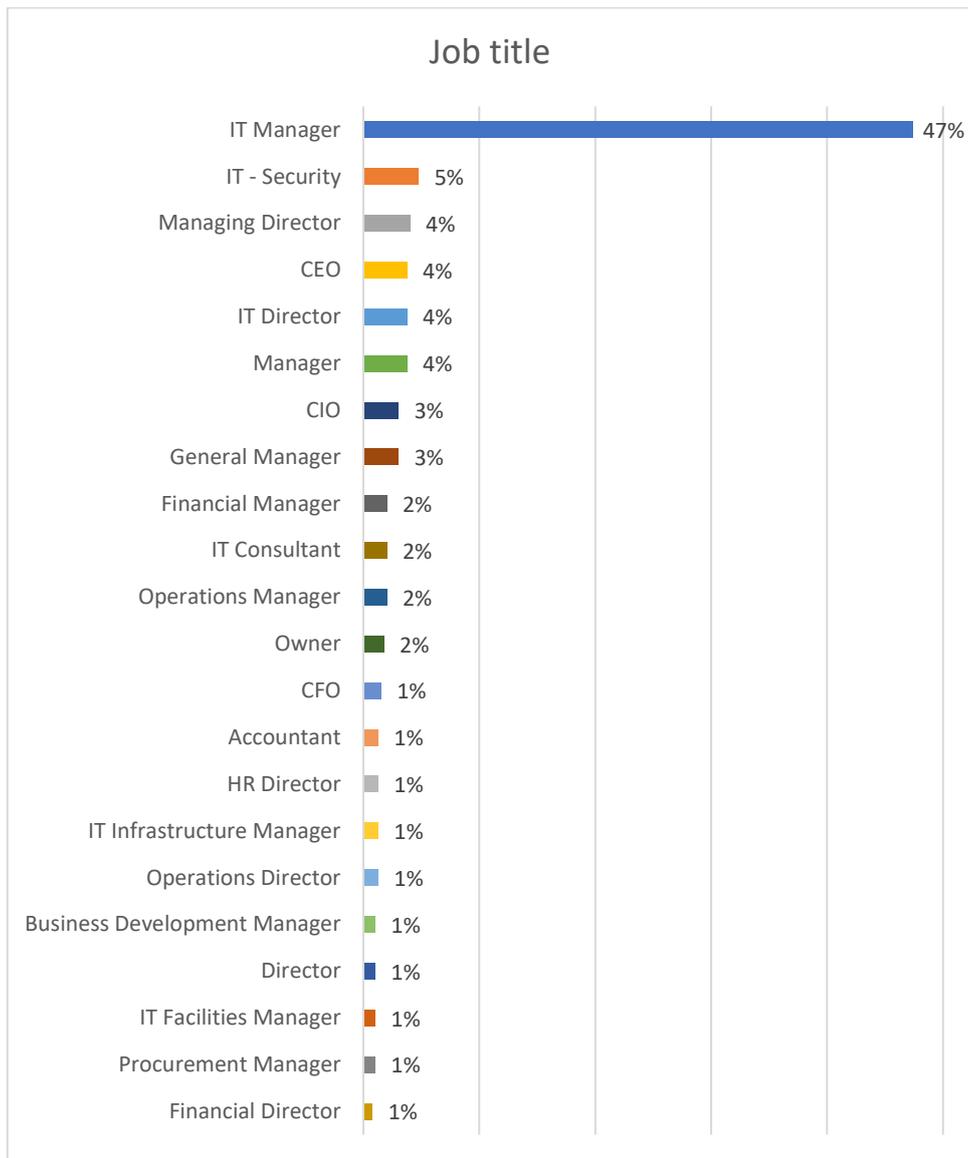
As with provinces, most businesses were situated in the main business centre cities of South Africa. Johannesburg, Cape Town, and Durban were the top three cities that held the most respondents, at 41%, 20%, and 18% respectively.

Industry



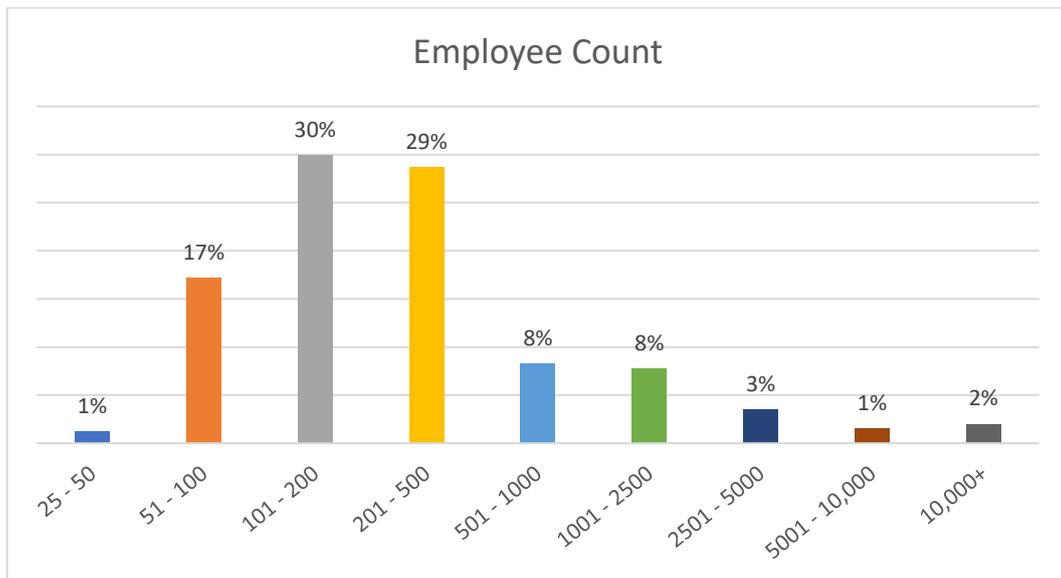
Just over a third of the sample comprised of businesses from the manufacturing sector while the remaining two thirds were from other businesses, primarily information technology (10%) and retail (9%).

Job title



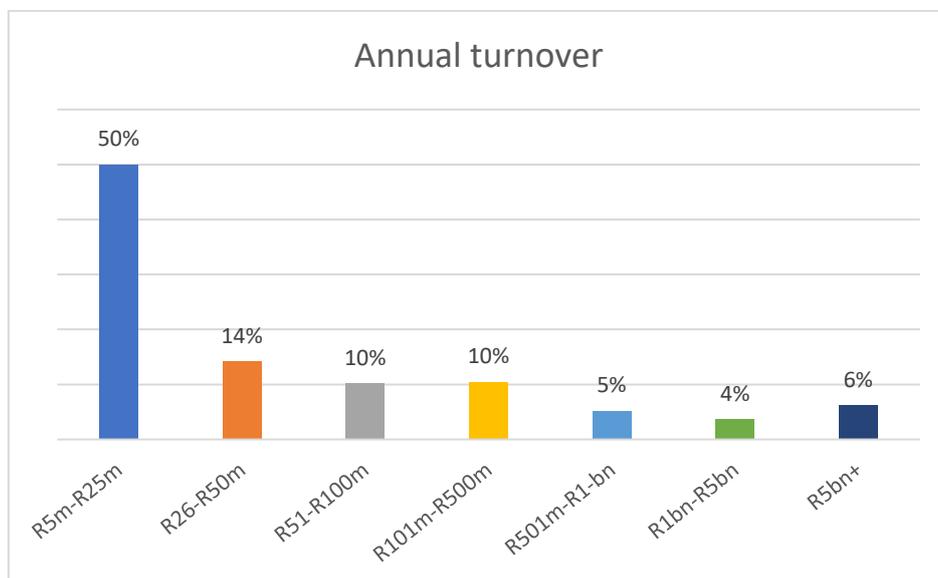
Almost half (47%) of the sample reported they were an IT manager (in some capacity), while the remainder of the sample was comprised of other types of managers or directors.

Employee count



With a skew towards more medium-to-large sized businesses (as defined by the [latest government gazette of 2019](#)), over three quarters of businesses in the sample are between 51 and 500 in size.

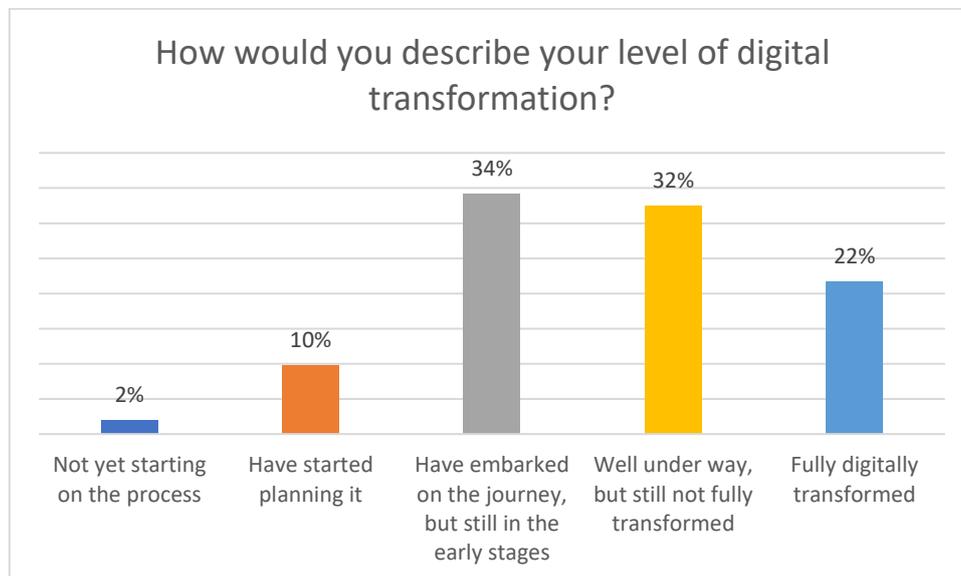
Annual turnover



Although half of the businesses reported an annual turnover of between R5 million and R25 million, the remaining half are more evenly spread among the higher earning categories.

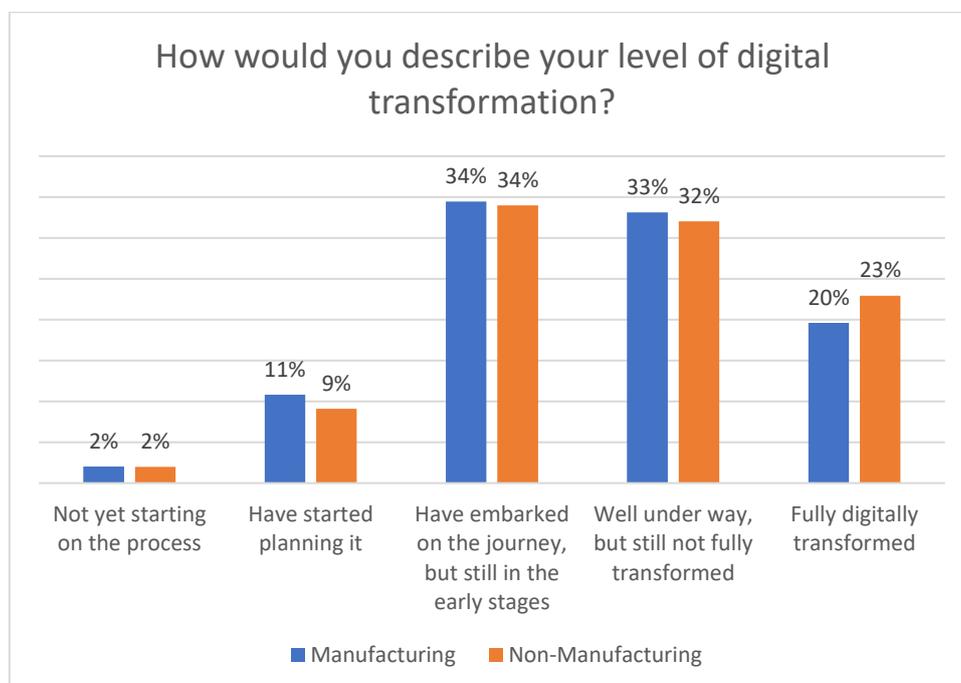
General data

Level of digital transformation



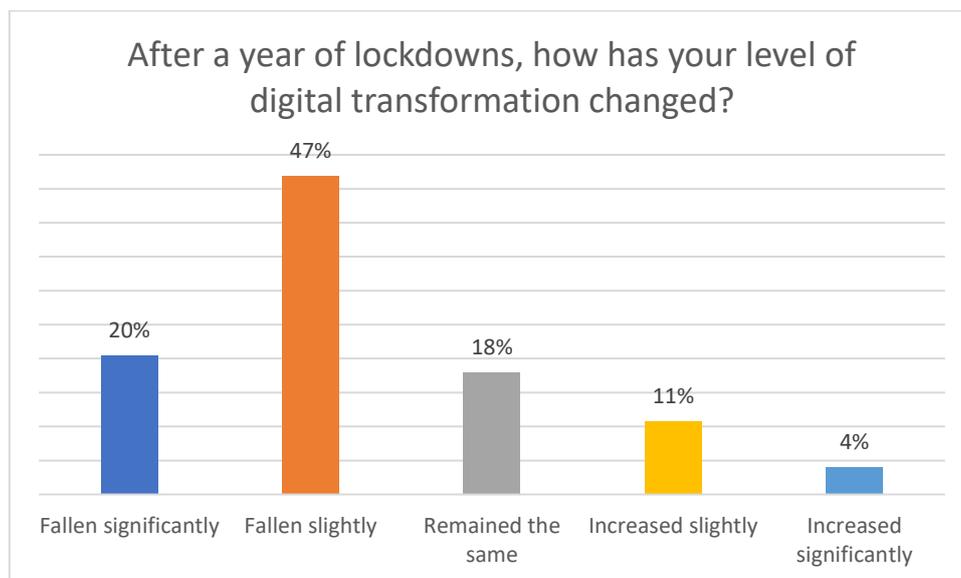
Most businesses in the sample skewed towards being more digitally transformed than not, but a non-insignificant one in ten businesses have not yet planned nor started their digital transformation journey.

Level of digital transformation – split between manufacturing and non-manufacturing



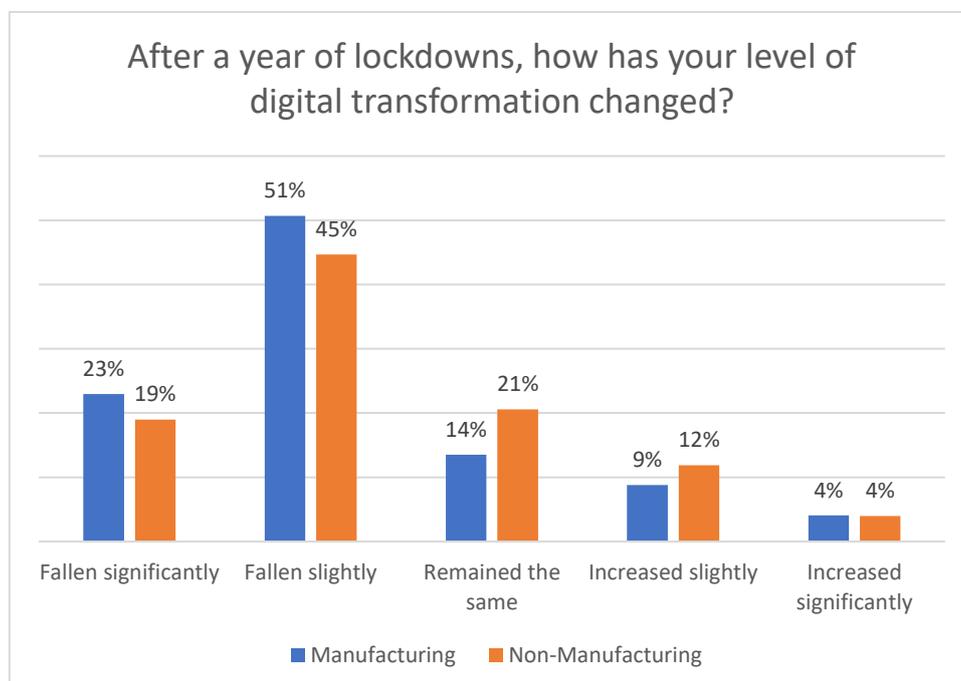
The difference in digital transformation is mostly minor between manufacturing and non-manufacturing industries, which indicates the pervasiveness of requiring a digital transformation strategy, regardless of industry.

How digital transformation changed after a year of lockdowns



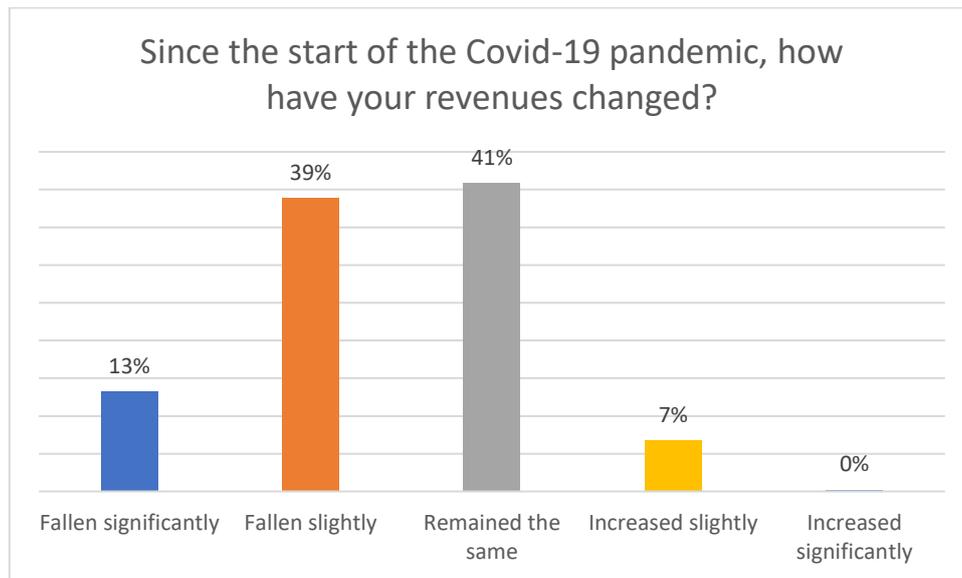
Over the past year, nearly half (47%) of businesses reported their level of digital transformation had fallen slightly. This may be due to budgeting constraints introduced by pandemic uncertainty, or that businesses may be more mature in their digital transformation journey and it has slowed.

How digital transformation changed after a year of lockdowns – split between manufacturing and non-manufacturing



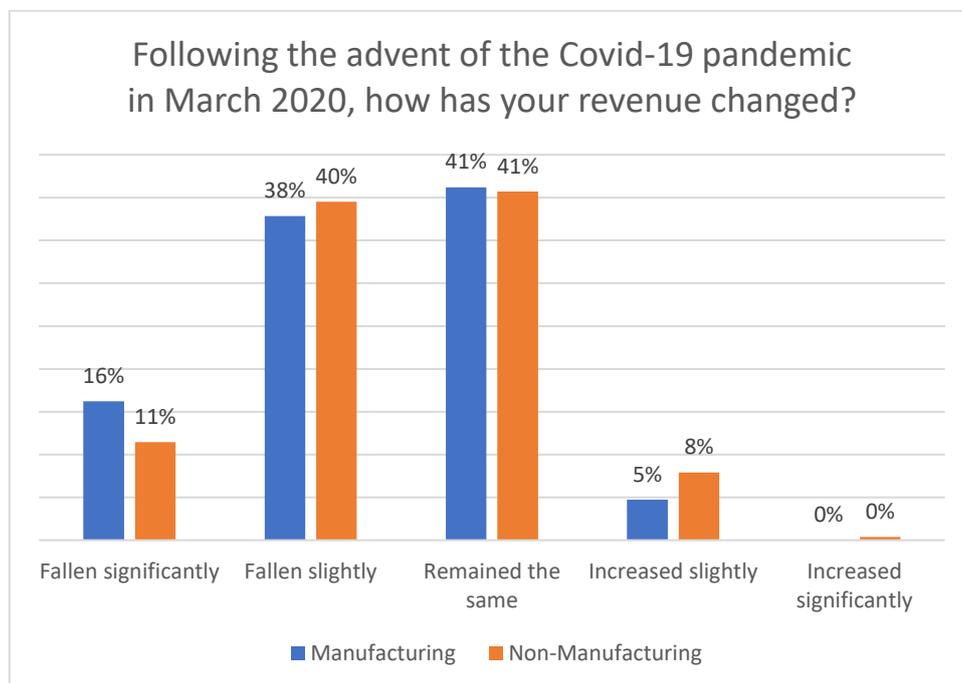
Slightly more manufacturing businesses had slowed their digital transformation over the past year, compared to the rest of the industries. Due to the in-person nature of manufacturing, their processes are likely unaffected by remote work tools and other advanced technologies that enable other industries to transform more rapidly.

How revenue has changed since the start of the pandemic



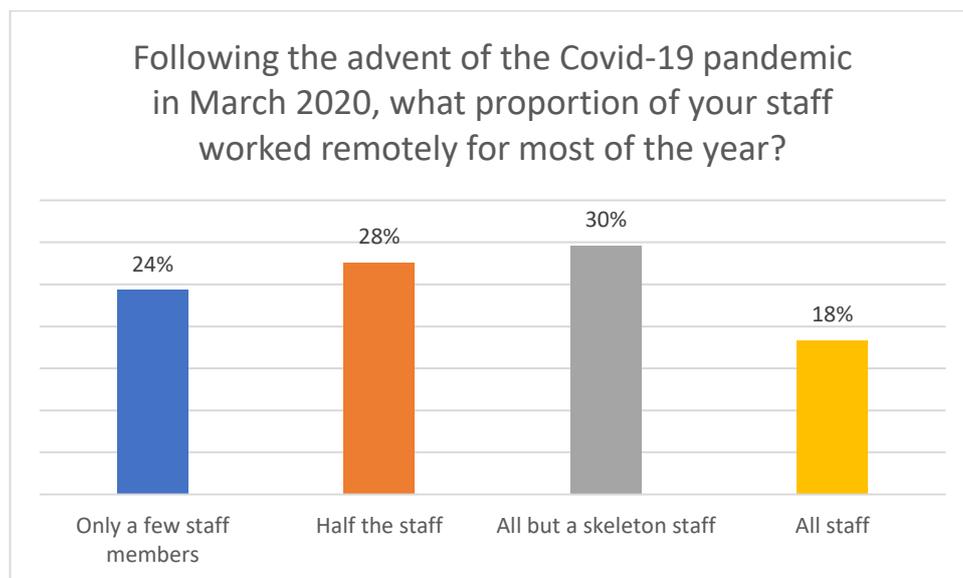
Just over two fifths of businesses had their revenues remain the same throughout the pandemic, closely followed by just under two fifths experiencing a slight fall in revenue in the same period. Throughout the pandemic, nearly no businesses reported a significant increase in revenue. The economic effect of the pandemic is clearly expressed through this stat.

How revenue has changed since the start of the pandemic – split between manufacturing and non-manufacturing



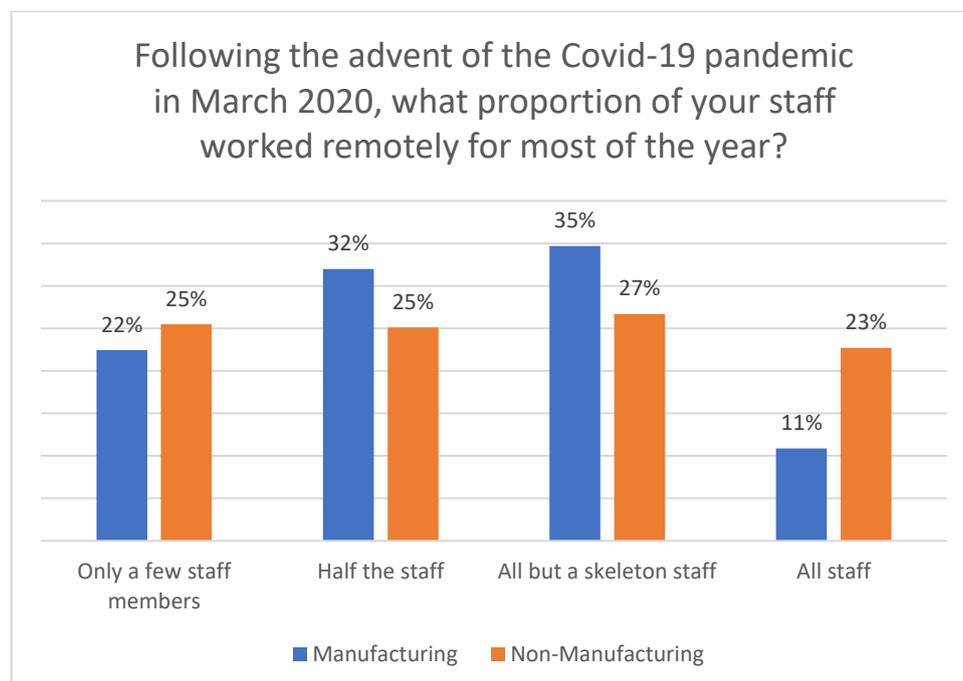
Slightly more manufacturing businesses had experienced a significant fall in revenue over the pandemic, compared to other industries. Conversely, businesses outside of manufacturing were nearly twice as likely to experience an increase in revenue in the last year, compared to manufacturing.

Proportion of staff working remotely since lockdowns started



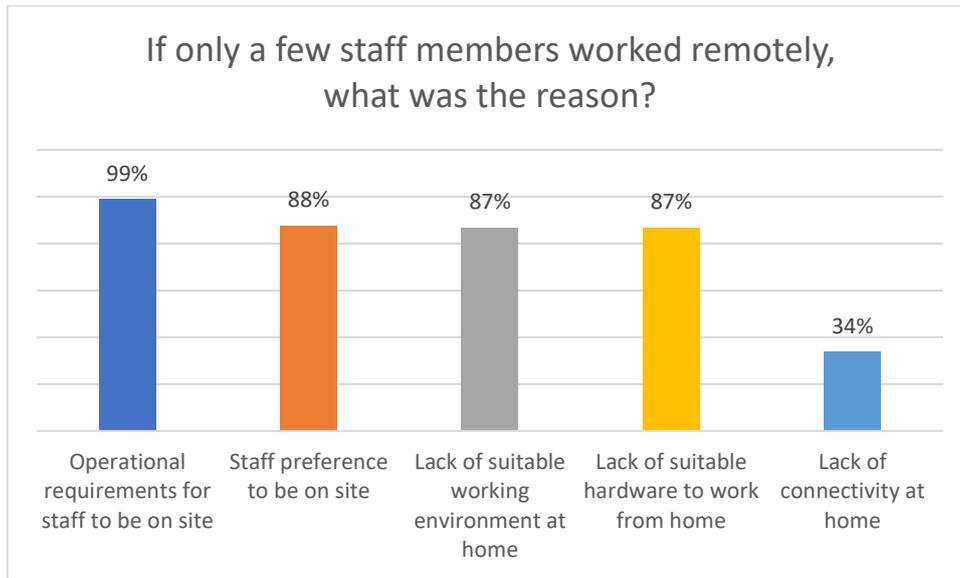
With varied responses across industries, many businesses had different remote working strategies. Almost one in three (31%) businesses had all but skeleton staff working remotely throughout the pandemic, closely followed by businesses over a quarter (28%) having half their staff working remotely. The lowest proportion, but not by much, is 1 in 5 businesses working fully remotely.

Proportion of staff working remotely since lockdowns started – split between manufacturing and non-manufacturing



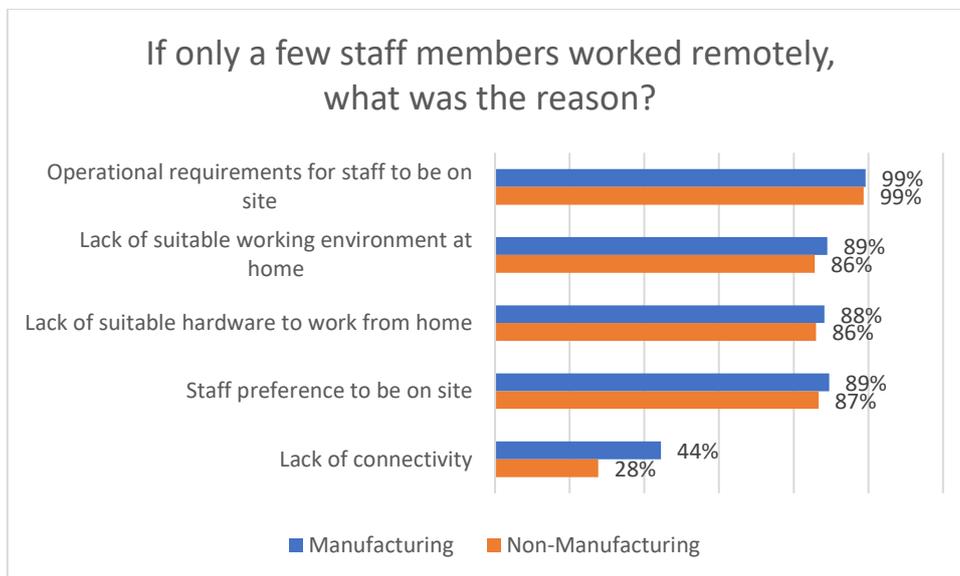
Over one in three (35%) manufacturing businesses had all but skeleton staff working remotely, compared to other industries that had over a quarter (27%) doing the same. It's more than twice as likely to find other industries working from home, compared to the manufacturing sector. This may be a function of the in-person nature of production lines in the manufacturing industry.

Reasons for only a few staff members being able to work remotely



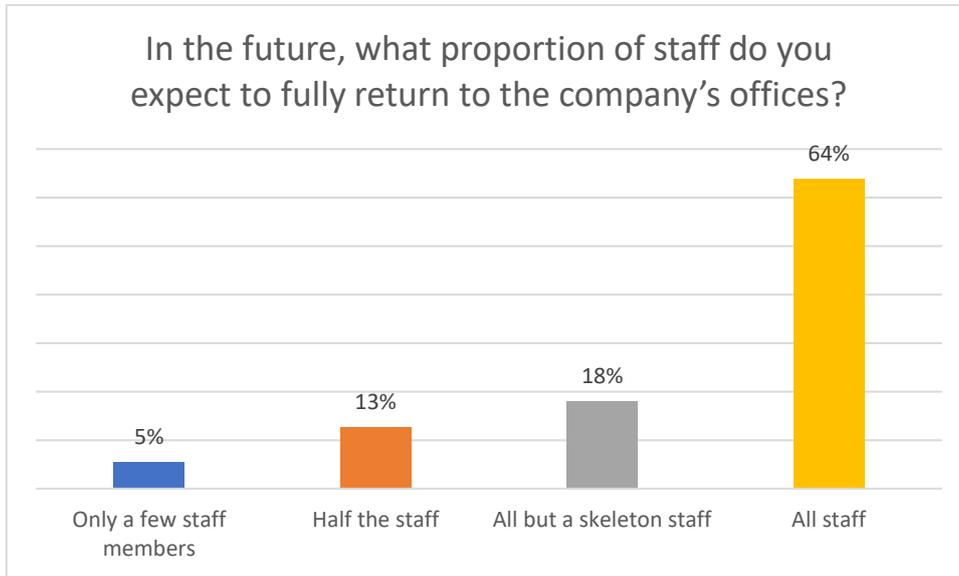
Nearly all (99%) businesses reported they only allowed a few staff members to work remotely because of operational requirements for staff to be on site. This factor makes sense for businesses with equipment that cannot be transported to an employee’s home. Almost 9 in 10 businesses reported that staff preferred to be on site (88%), employees lacked a suitable work from home environment (87%), and a lack of suitable hardware to work from home (87%). While this may lead one to think connectivity is the issue with working from home, only a third (34%) of businesses reported this was the case.

Reasons for only a few staff members being able to work remotely – split between manufacturing and non-manufacturing



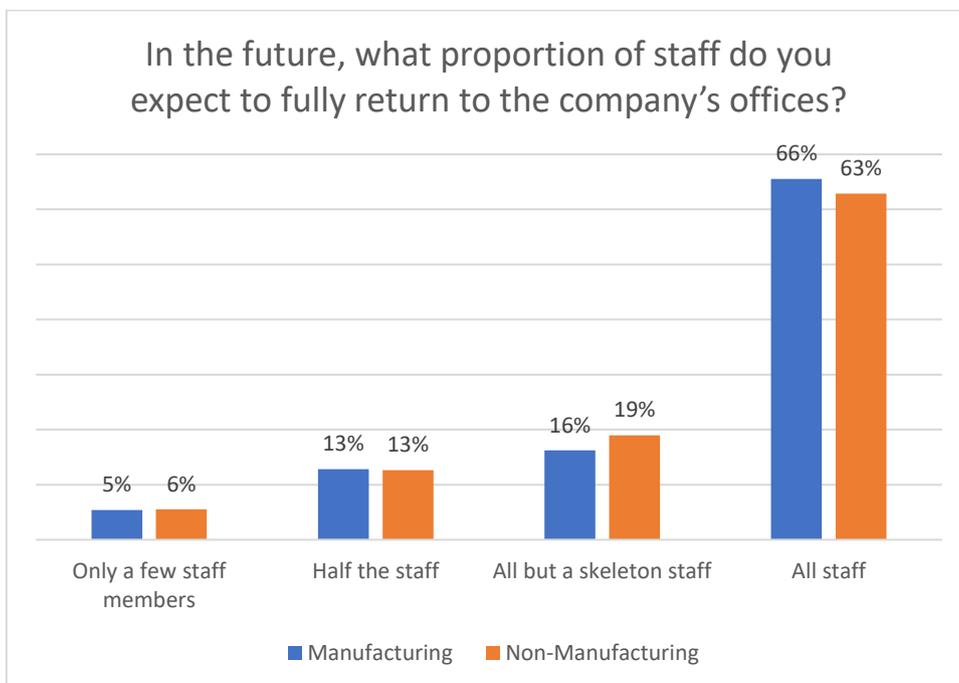
Over 2 in 5 (44%) of manufacturing businesses reported a lack of connectivity affecting their staff’s ability to work from home, compared to the 28% that affected other industries.

In the future, what proportion of staff do you expect to fully return to the company's offices?



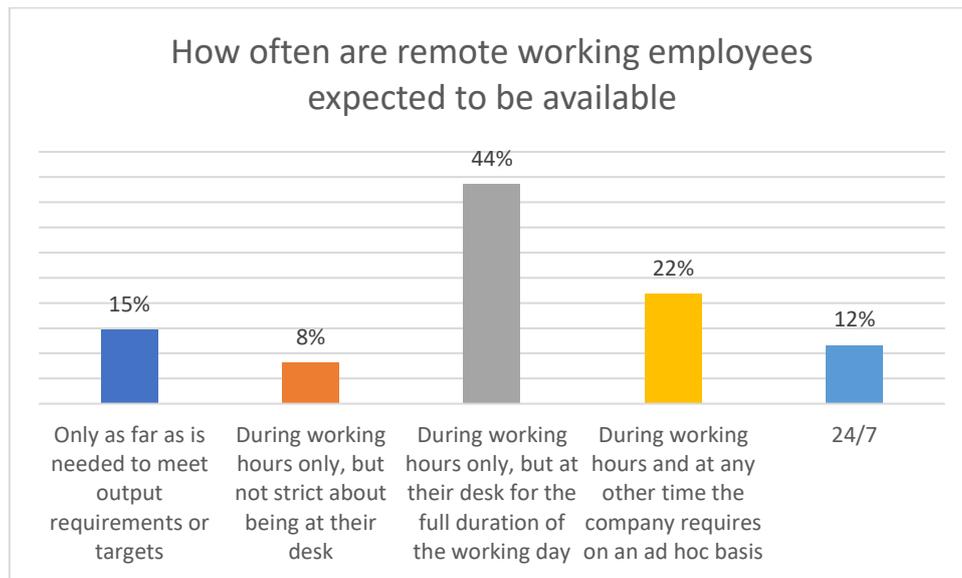
Even though there was a high uptake of remote work during the pandemic, nearly two thirds (64%) of businesses are expecting all their staff to return to the office in future. This shows that working from home culture has not yet proved itself to decision makers, and remote work was done out of necessity for only adhering to social distancing guidelines.

In the future, what proportion of staff do you expect to fully return to the company's offices – split between manufacturing and non-manufacturing



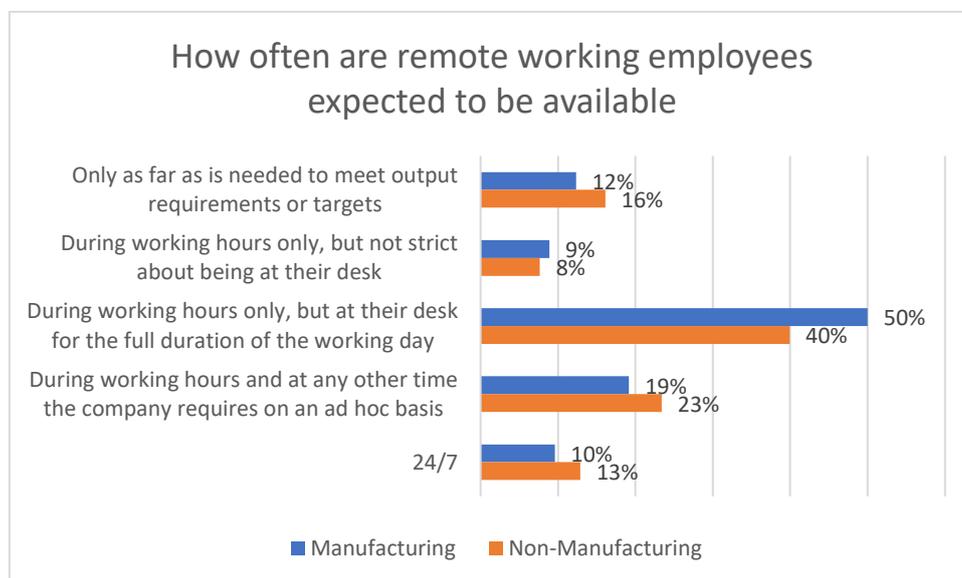
Between manufacturing and non-manufacturing industries, the consensus is the same: most staff must return to offices and work premises in future.

How often are remote working employees expected to be available



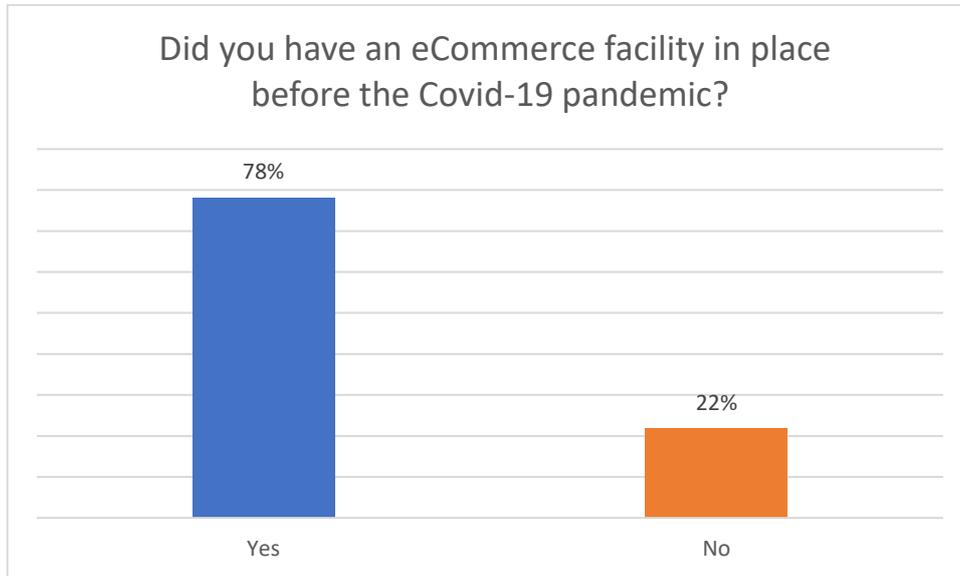
The office hour culture remains strong, whether it is remote or not, over 2 in 5 (44%) businesses reporting staff are expected to remain available during work hours. Most businesses will remain in this time structure as it is suitable for communications with clients and gives all staff members a set time for collaborative tasks. On the extreme ends of the working spectrum, over 1 in 10 (15%) businesses reported their employees only needed to be work to meet output requirements or targets, while on the other end, 1 in 10 (12%) of businesses expected their employees to be available 24/7.

How often are remote working employees expected to be available – split between manufacturing and non-manufacturing



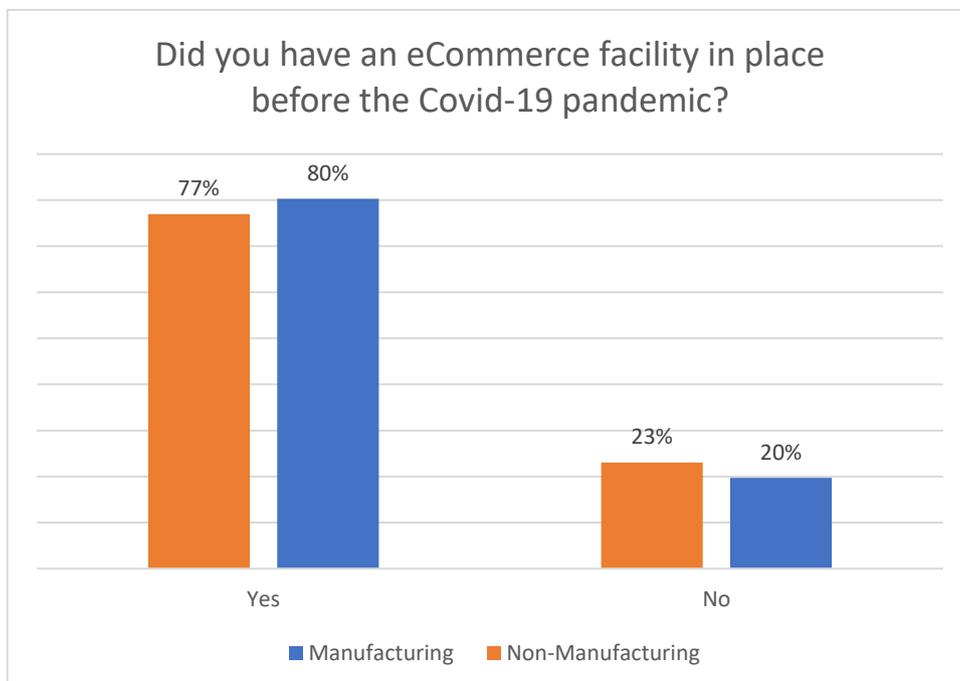
Half of the manufacturing businesses were more attune to a set work hour schedule, compared to the lower 40% of other industries. Employees in other industries, however, were slightly more likely to be working in the extreme situations of no set hours or being available all the time.

Did you have an eCommerce facility in place before the Covid-19 pandemic?



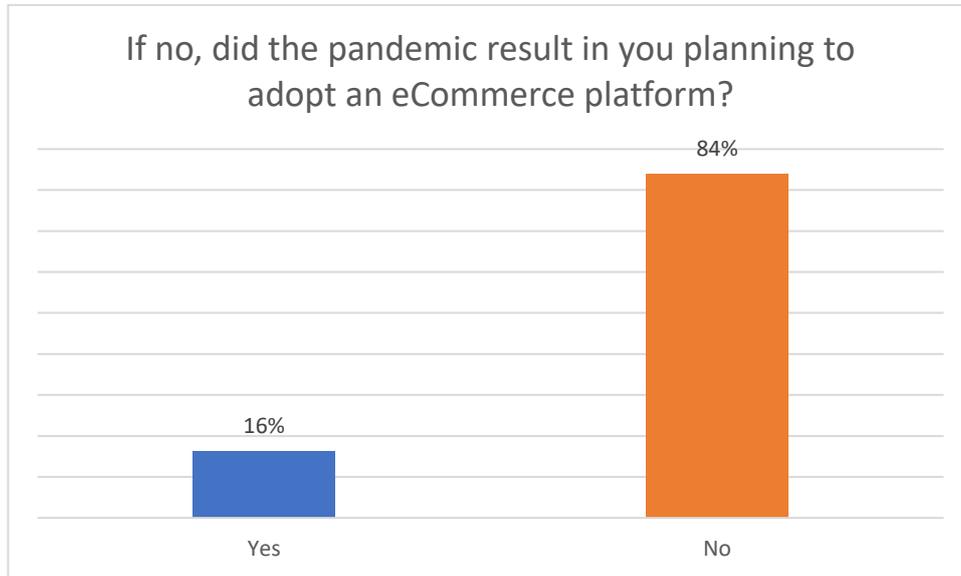
With nearly 4 in 5 (78%) businesses having an ecommerce facility in place, the need for these platforms is shown to be pervasive in South African businesses. Even though ecommerce platforms may be envisioned as online store fronts like Takealot, they can take several forms like contact forms on websites that enable email conversations with clients.

Did you have an eCommerce facility in place before the Covid-19 pandemic – split by manufacturing and non-manufacturing



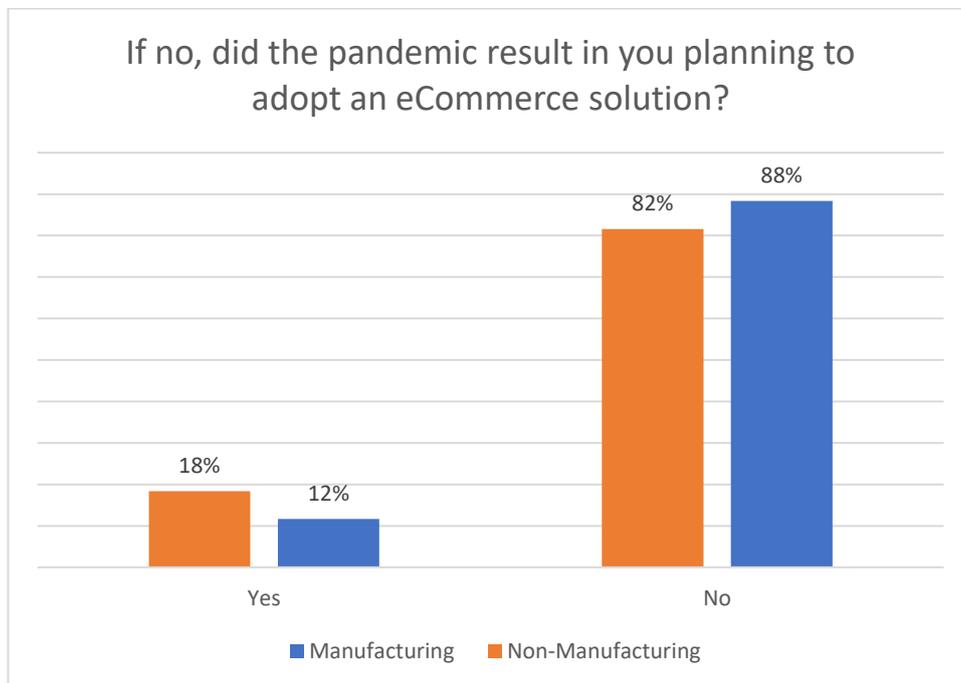
Slightly more manufacturing businesses are using ecommerce platforms (at 80%), compared to the other industries (at 77%). This shows the power of digital technology usage in business to drive sales and client communication.

If no, did the pandemic result in you planning to adopt an eCommerce platform?



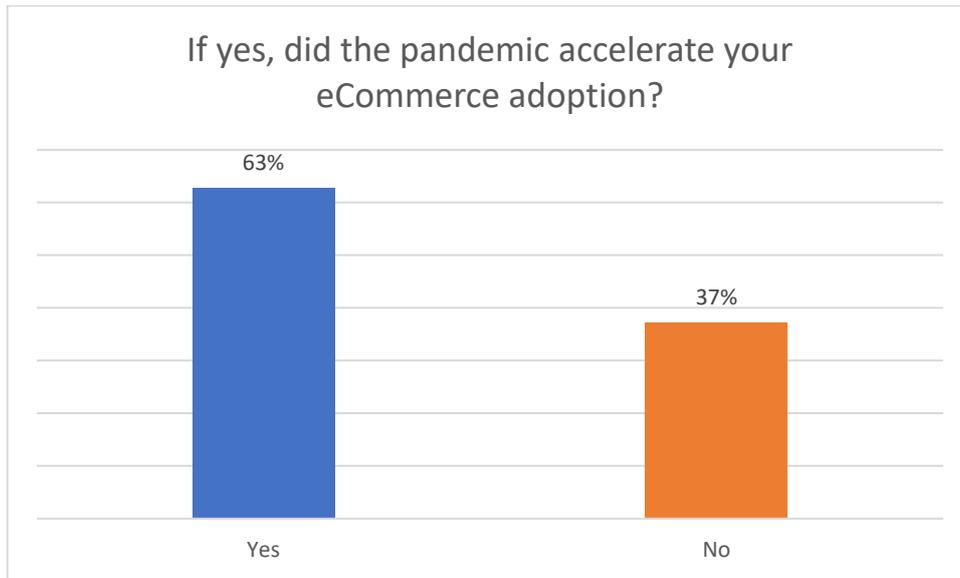
The education gap shows itself in those who aren't using an ecommerce platform. Over 4 in 5 (84%) of businesses who weren't using an ecommerce platform did not result in planning to use one in future.

If no, did the pandemic result in you planning to adopt an eCommerce platform – Split by manufacturing and non-manufacturing



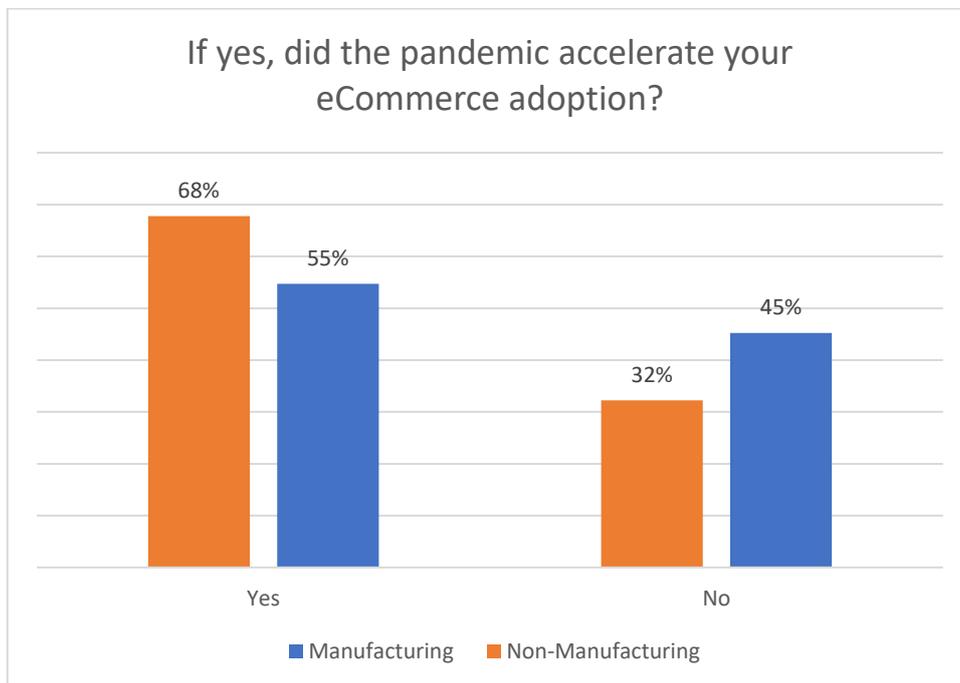
The above stat rings truer to manufacturing businesses, who were slightly less likely to adopt an ecommerce solution in future if they hadn't adopted one already.

If yes, did the pandemic accelerate your eCommerce adoption?



Of those who did adopt an ecommerce platform, just under two thirds (63%) of businesses reported the pandemic accelerated their ecommerce adoption. This shows how businesses had to get more digital to deal with the landscape becoming more digital.

If yes, did the pandemic accelerate your eCommerce adoption – Split by manufacturing and non-manufacturing



The non-manufacturing sector had adopted ecommerce because of the pandemic more than the manufacturing sector. The other reason why the manufacturing sector did not find the pandemic as an accelerating factor may include that it was on their roadmap already since before the pandemic.

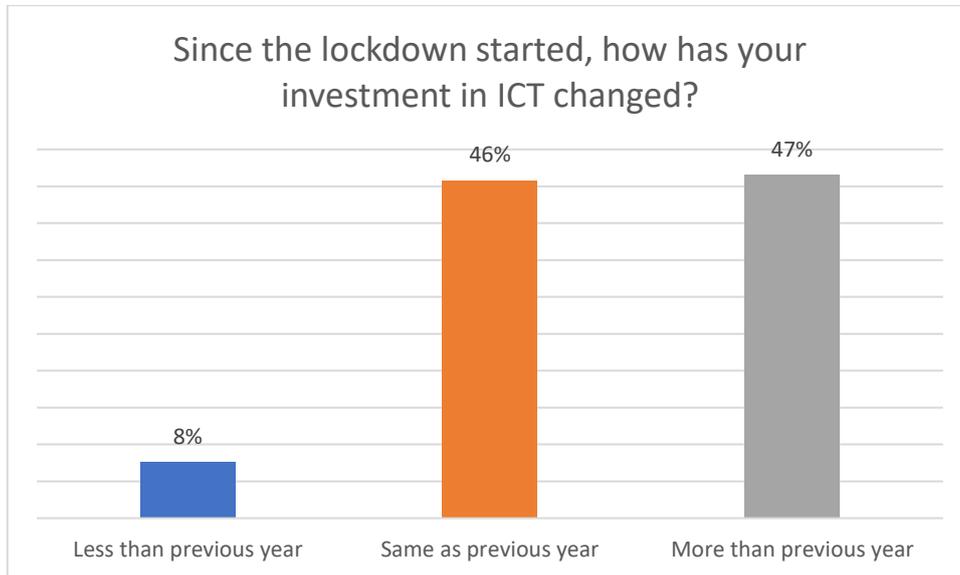
Which of these ecommerce solutions do you use for your business?



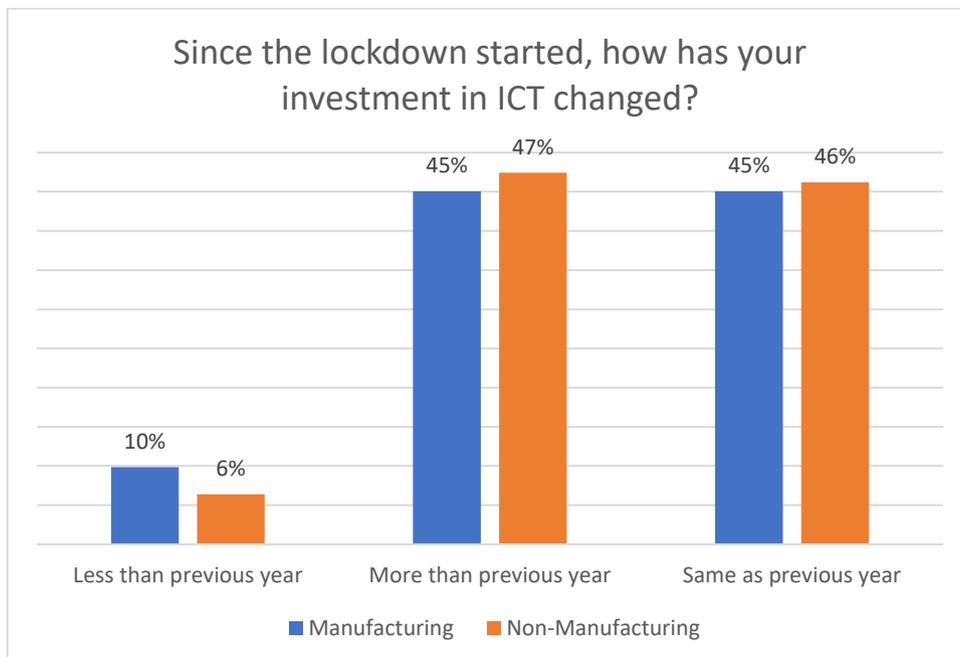
Which of these ecommerce solutions do you use for your business – Split by manufacturing and non-manufacturing



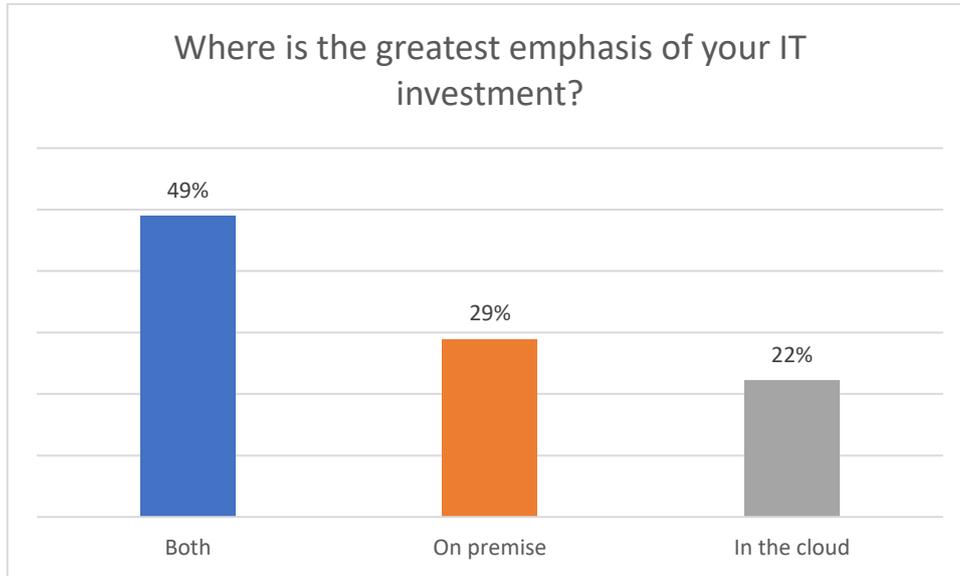
Since the lockdown started, how has your investment in ICT changed?



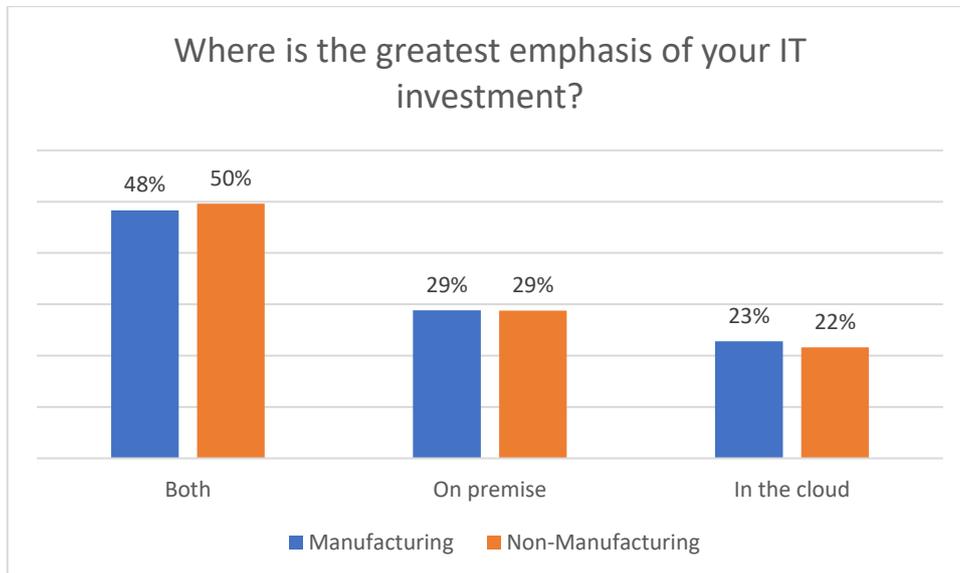
Since the lockdown started, how has your investment in ICT changed – Split by manufacturing and non-manufacturing



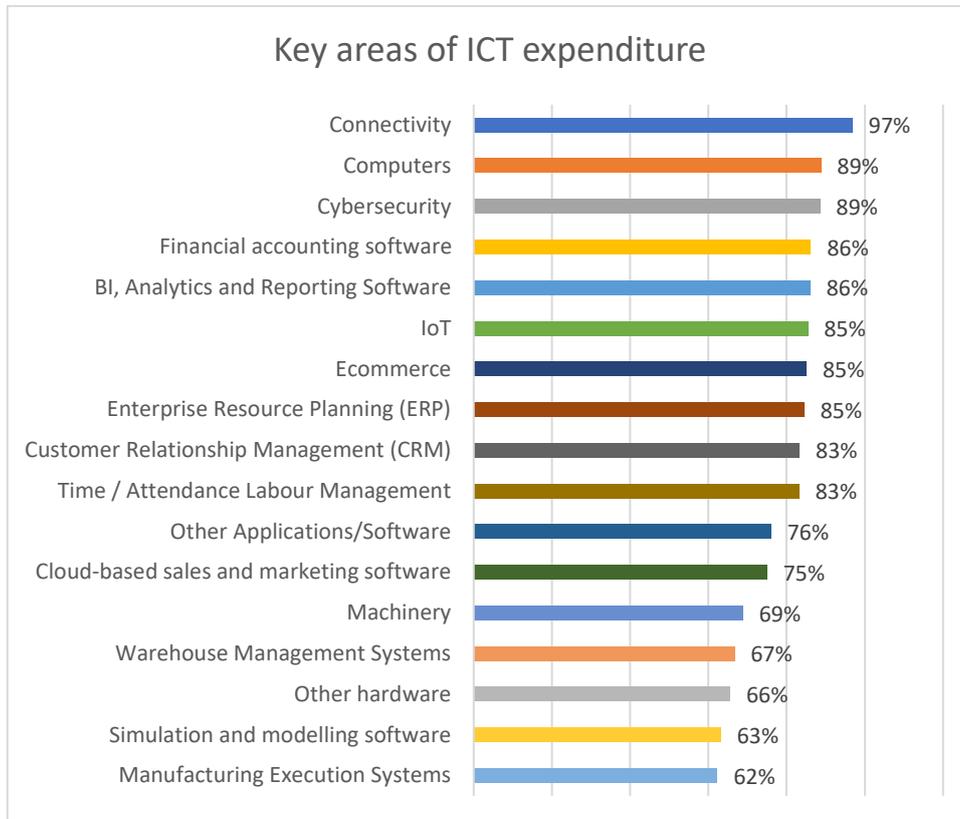
Where is the greatest emphasis of your IT investment?



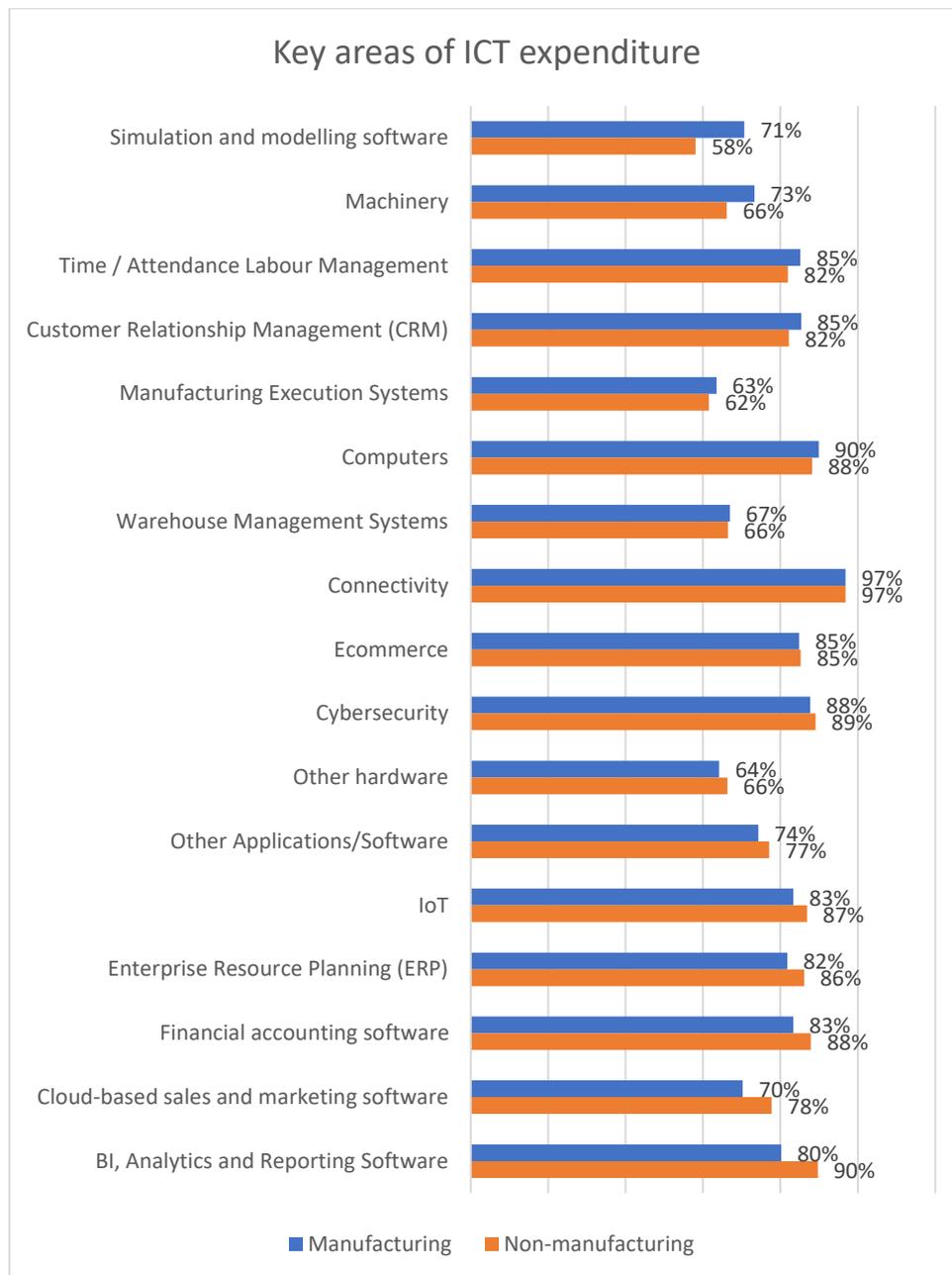
Where is the greatest emphasis of your IT investment – Split by manufacturing and non-manufacturing



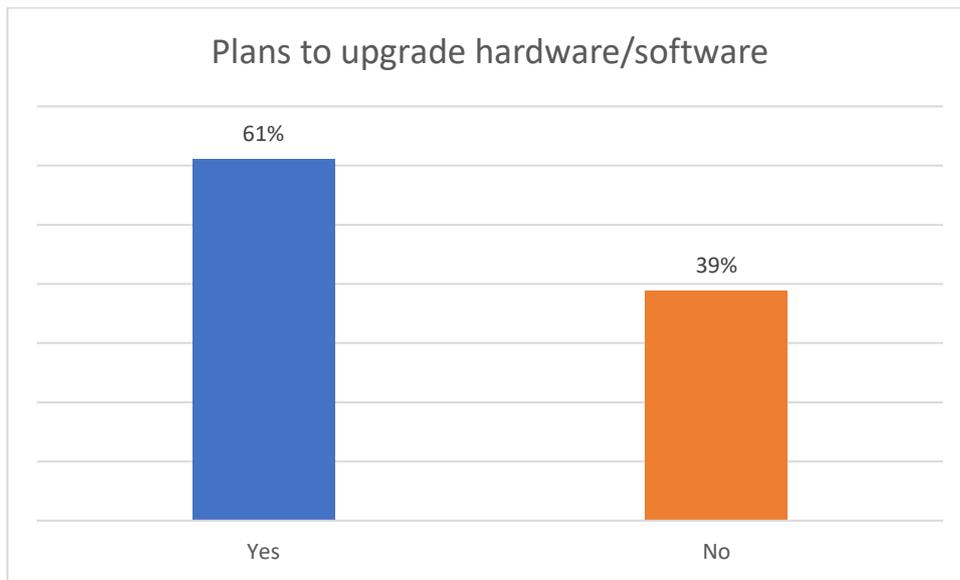
Key areas of ICT expenditure



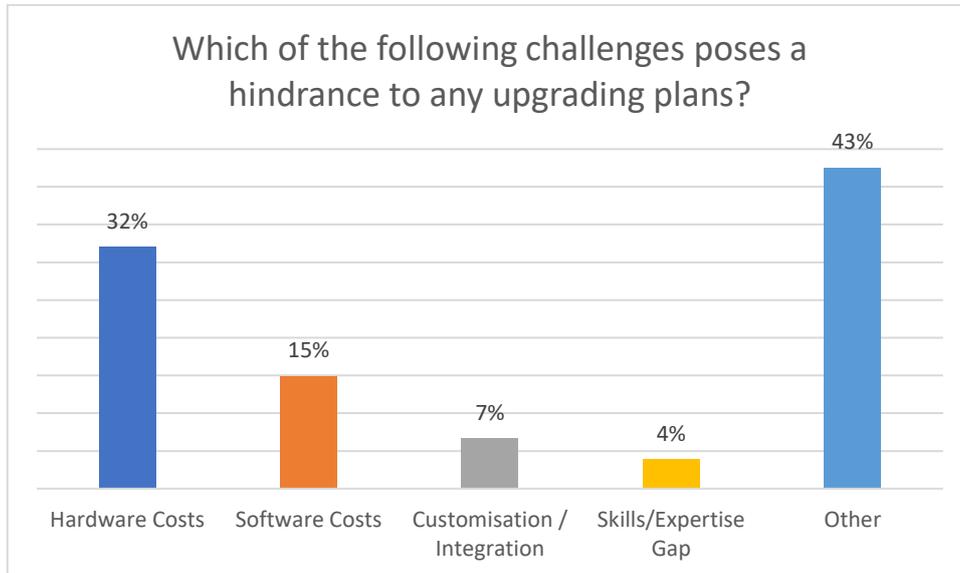
Key areas of ICT expenditure – Split by manufacturing and non-manufacturing



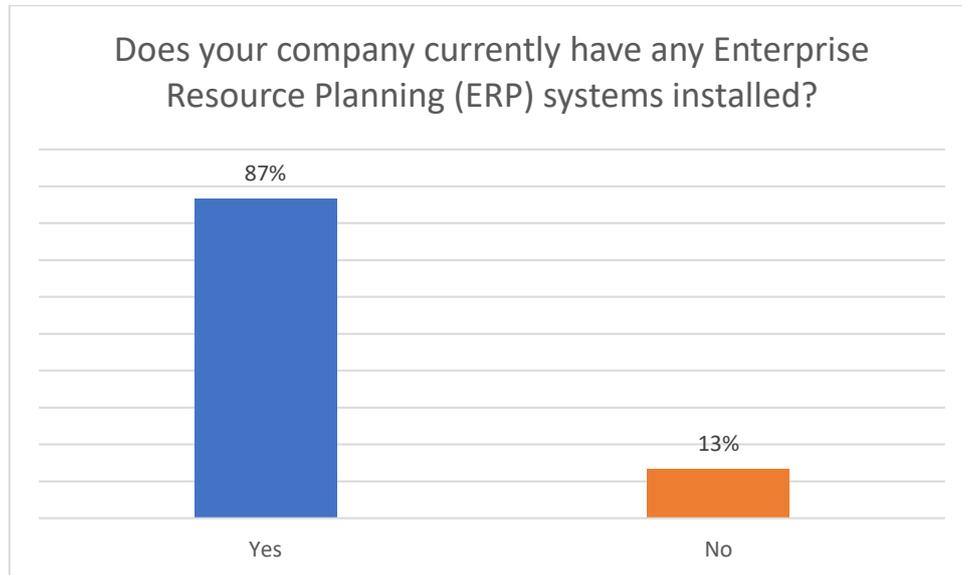
Plans to upgrade hardware/software



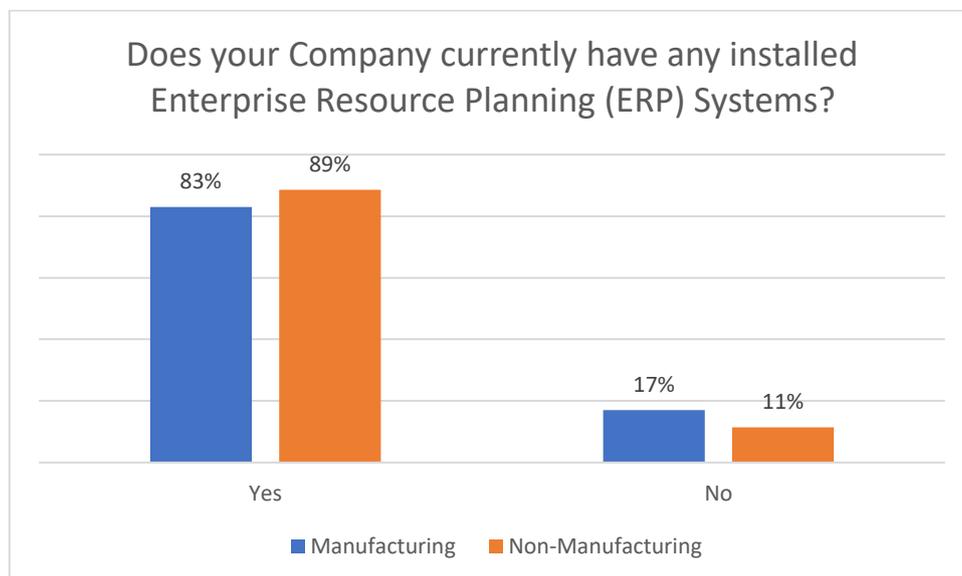
Which of the following challenges poses a hindrance to any upgrading plans?



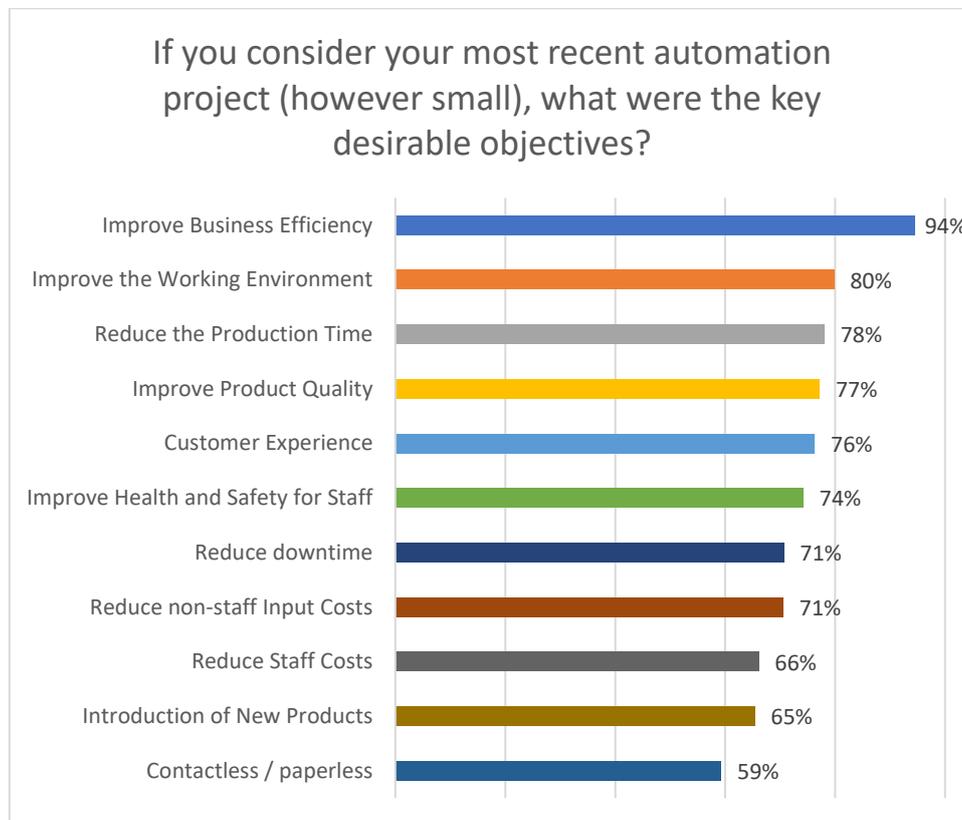
Does your company currently have any Enterprise Resource Planning (ERP) systems installed?



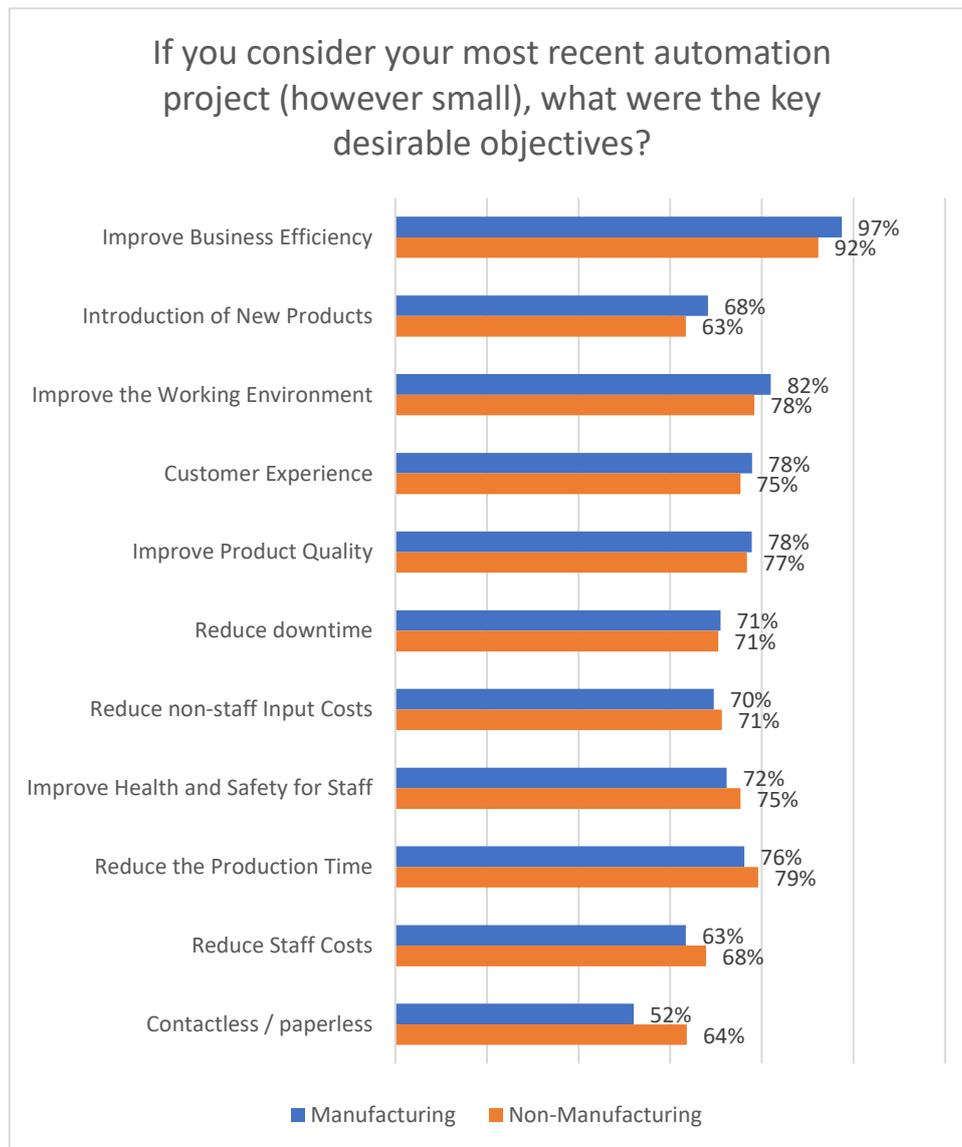
Does your company currently have any Enterprise Resource Planning (ERP) systems installed? – Split by manufacturing and non-manufacturing



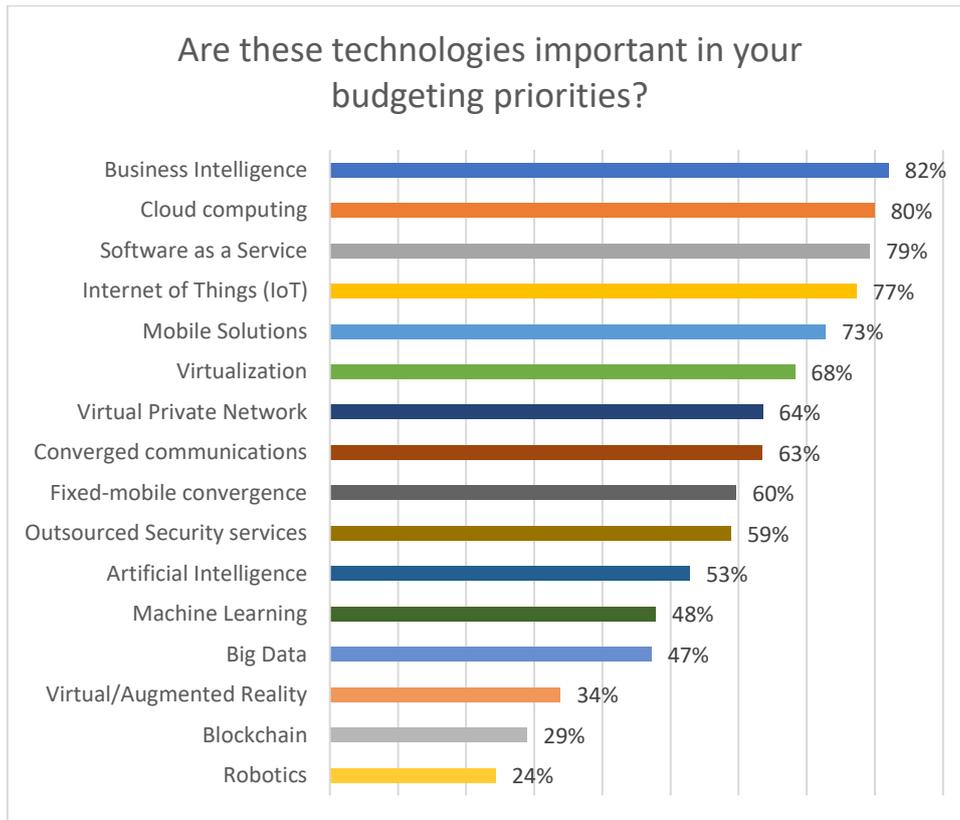
If you consider your most recent automation project (however small), what were the key desirable objectives?



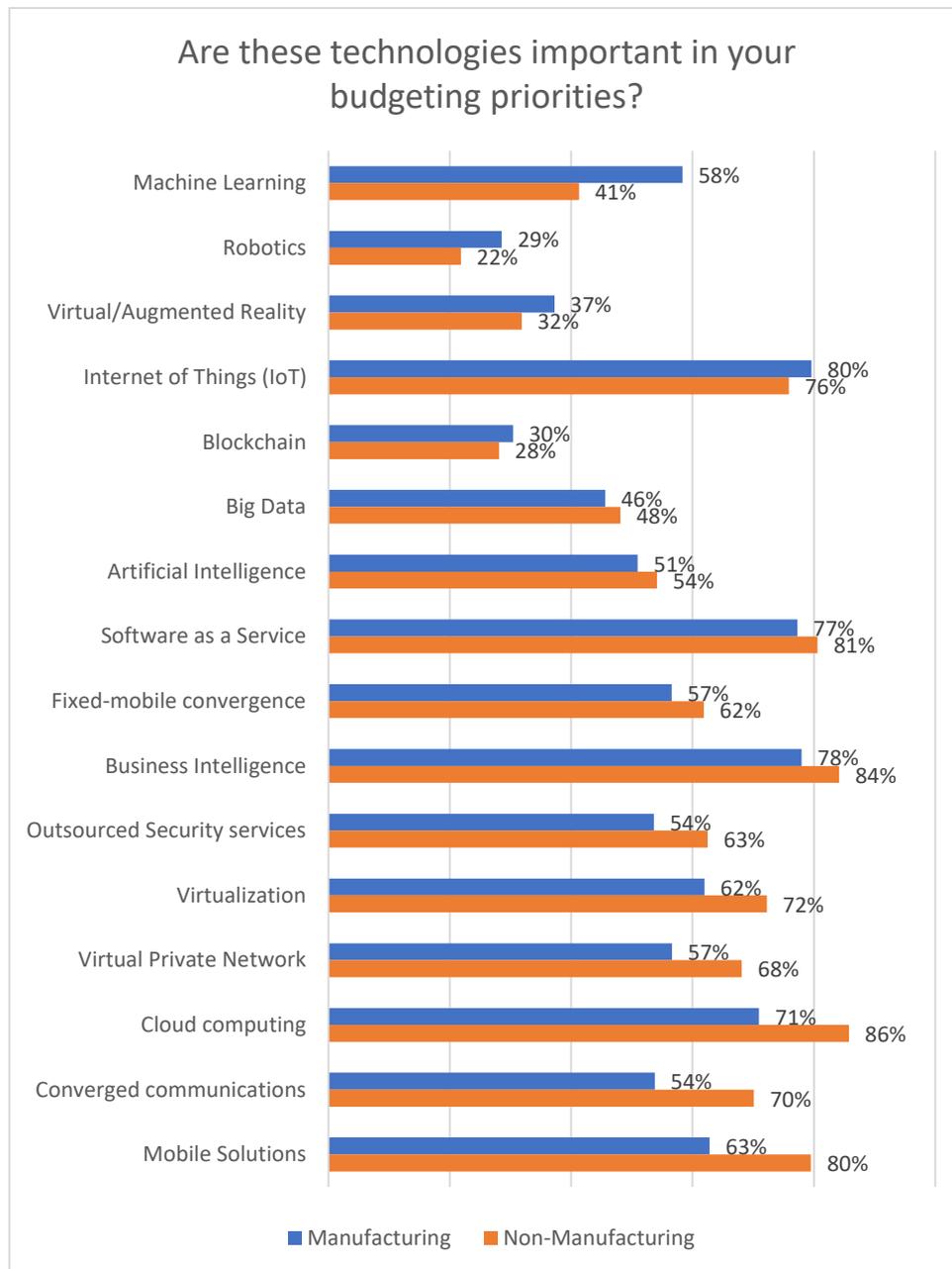
If you consider your most recent automation project (however small), what were the key desirable objectives – Split by manufacturing and non-manufacturing



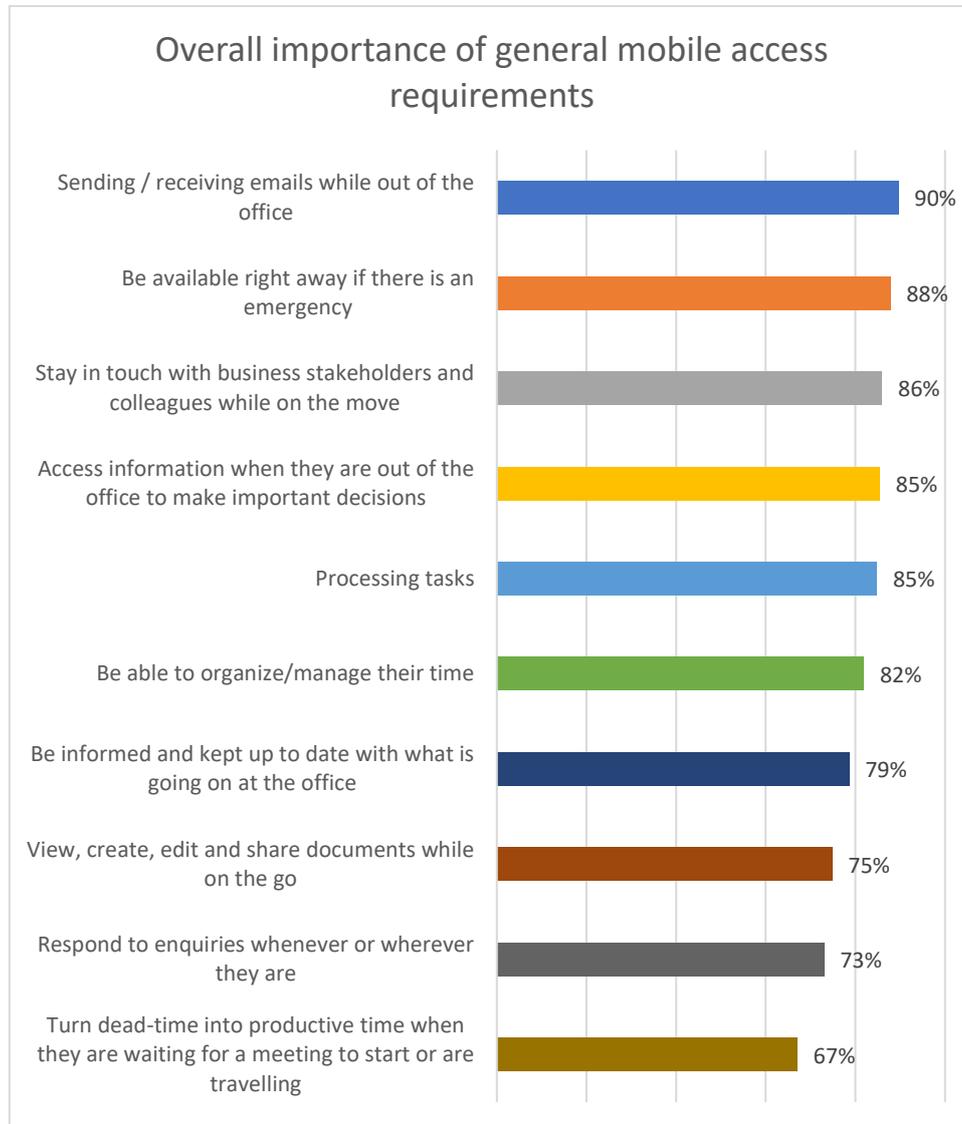
Are these technologies important in your budgeting priorities?



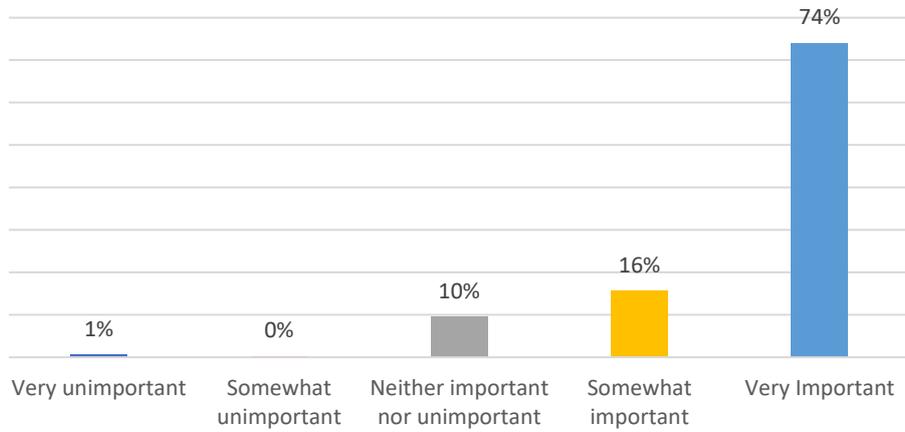
Are these technologies important in your budgeting priorities? – Split by manufacturing and non-manufacturing



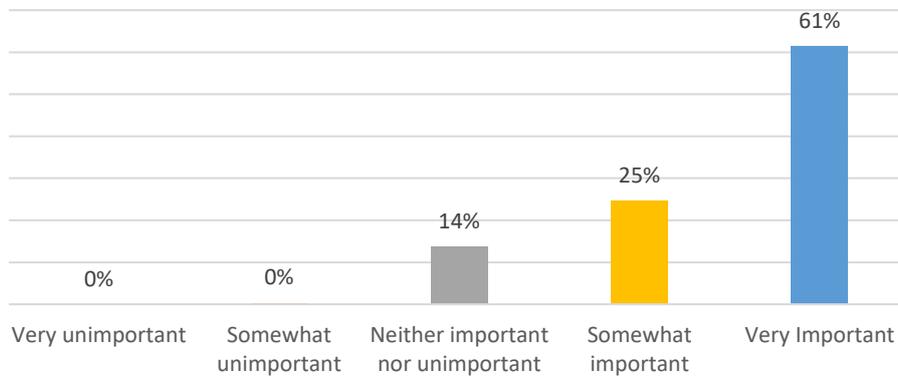
Overall importance of general mobile access requirements



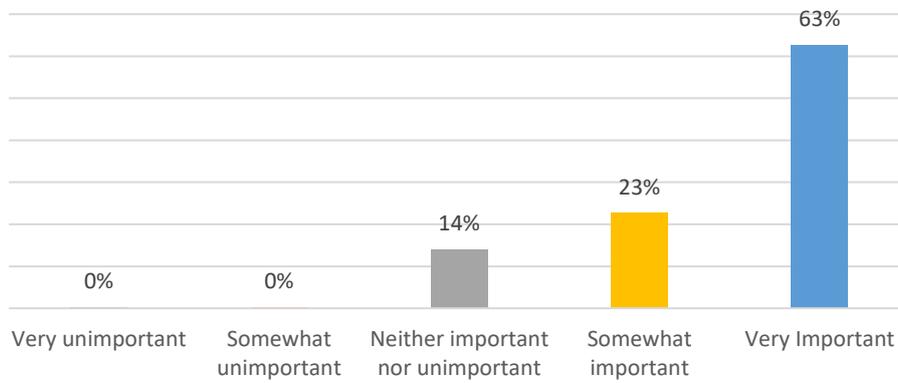
Importance of general mobile access: Sending / receiving emails while out of the office



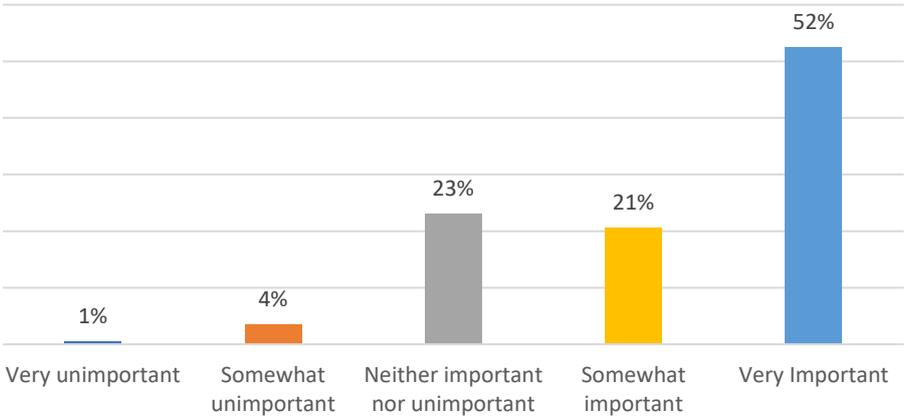
Importance of general mobile access: Stay in touch with business stakeholders and colleagues while on the move



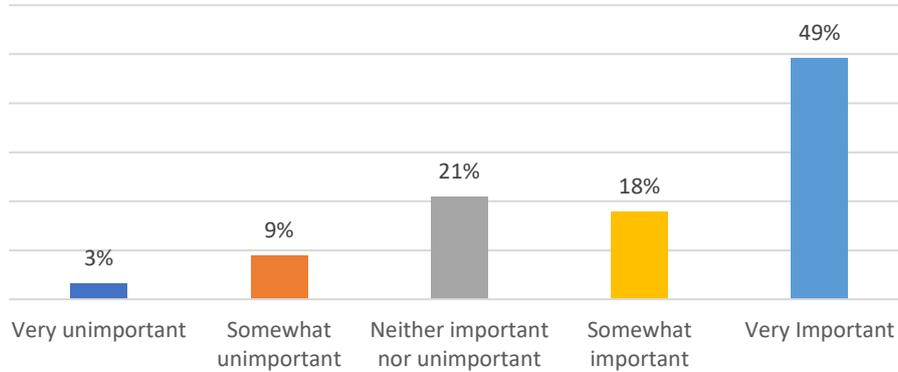
Importance of general mobile access: Access information when they are out of the office to make important decisions



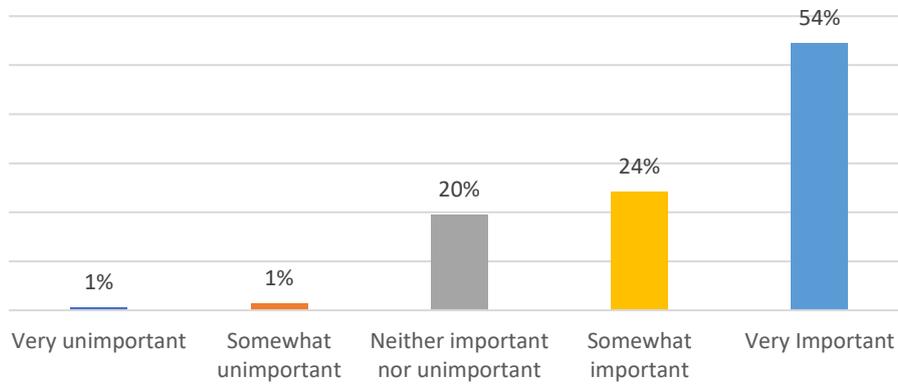
Importance of general mobile access: Respond to enquiries whenever or wherever they are



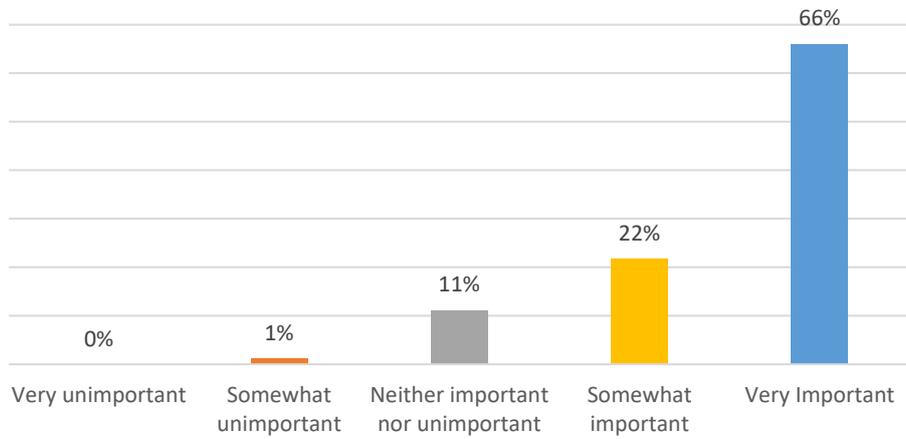
Importance of general mobile access: Turn dead-time into productive time when they are waiting for a meeting to start or are travelling



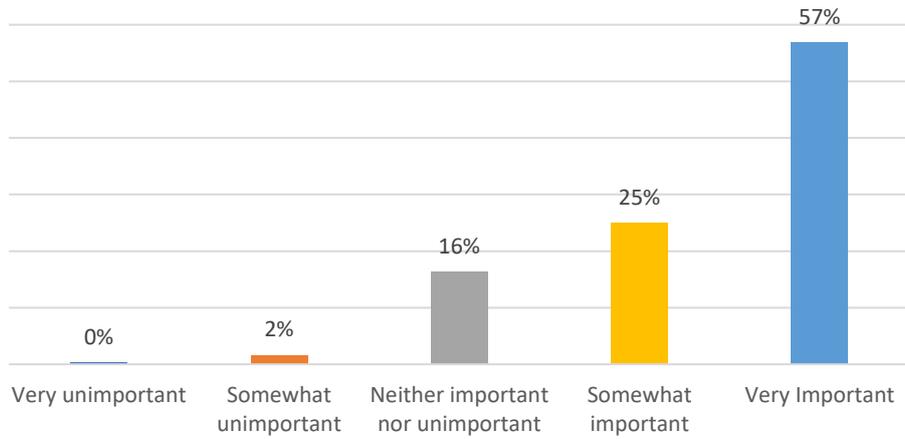
Importance of general mobile access: Be informed and kept up to date with what is going on at the office



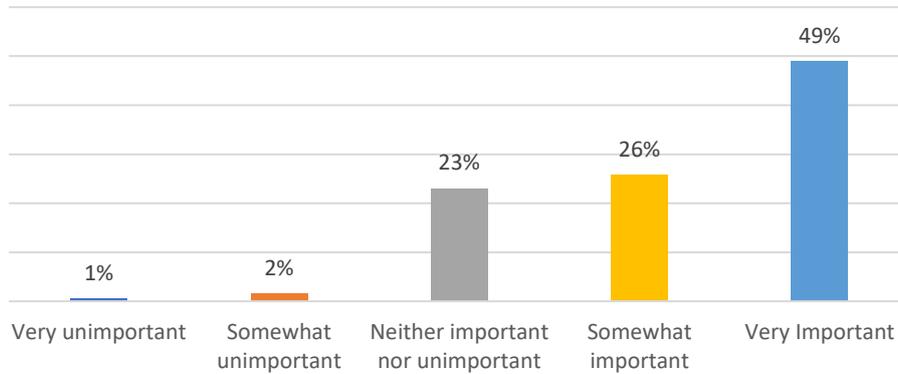
Importance of general mobile access: Be available right away if there is an emergency



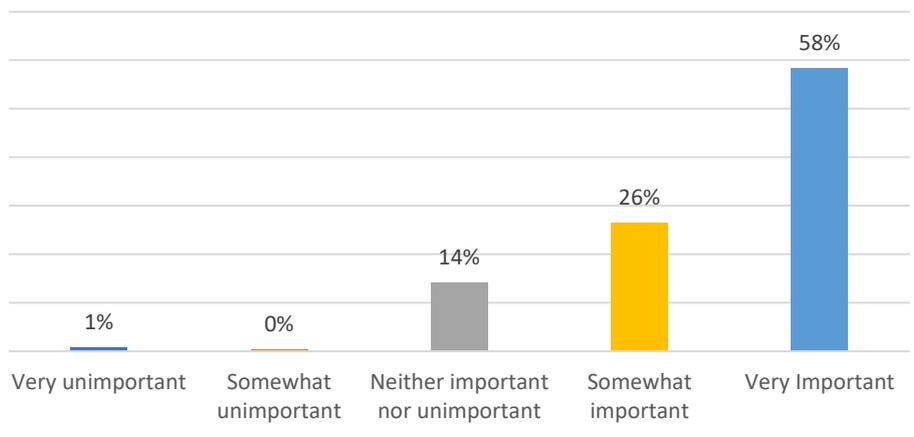
Importance of general mobile access: Be able to organize/manage their time



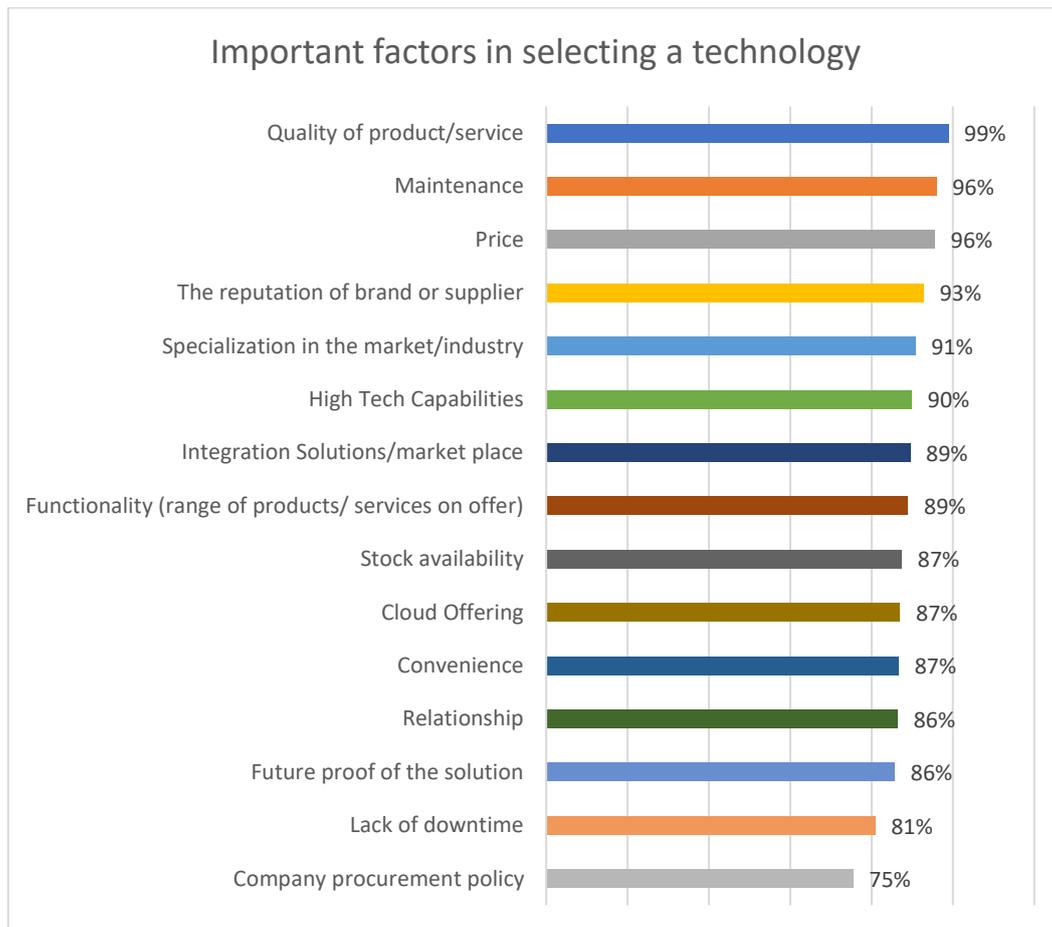
Importance of general mobile access: View, create, edit and share documents while on the go



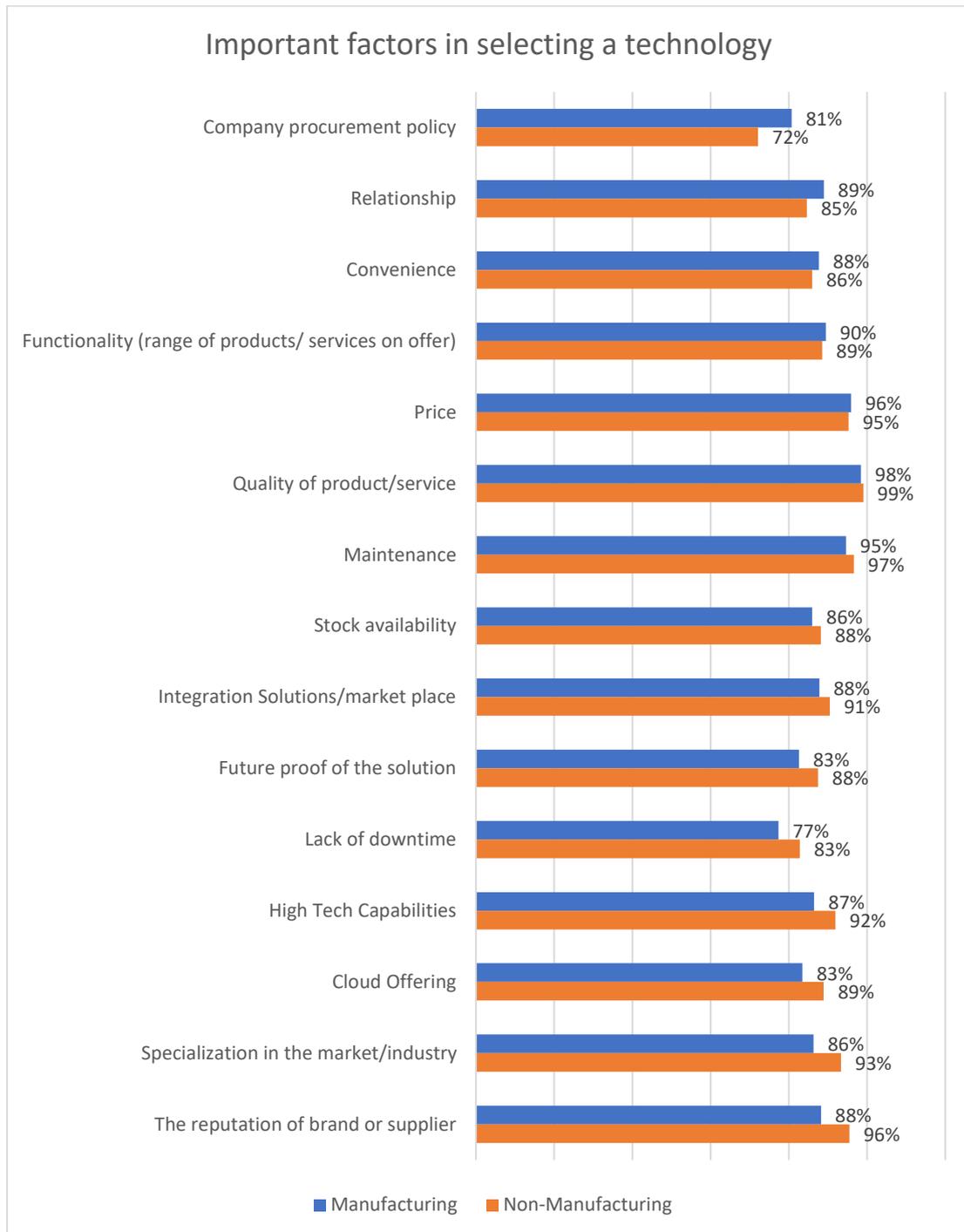
Importance of general mobile access: Processing tasks



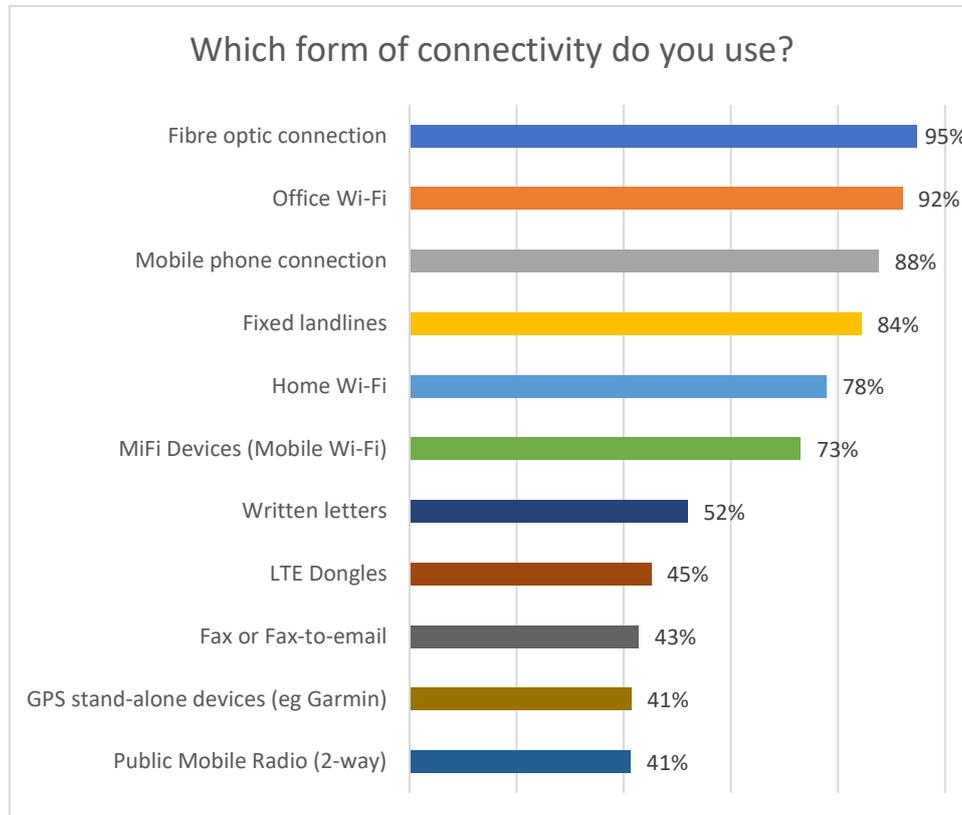
Important factors in selecting a technology



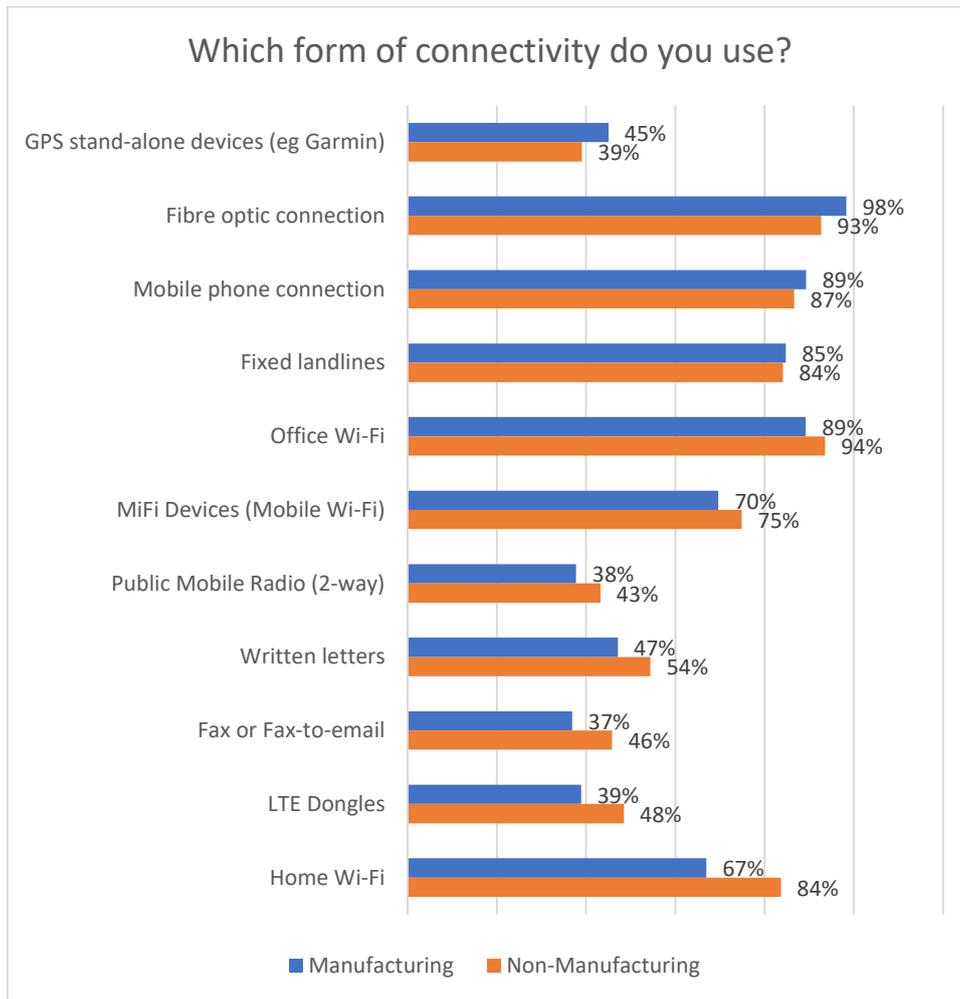
Important factors in selecting a technology – Split by manufacturing and non-manufacturing



Which form of connectivity do you use?



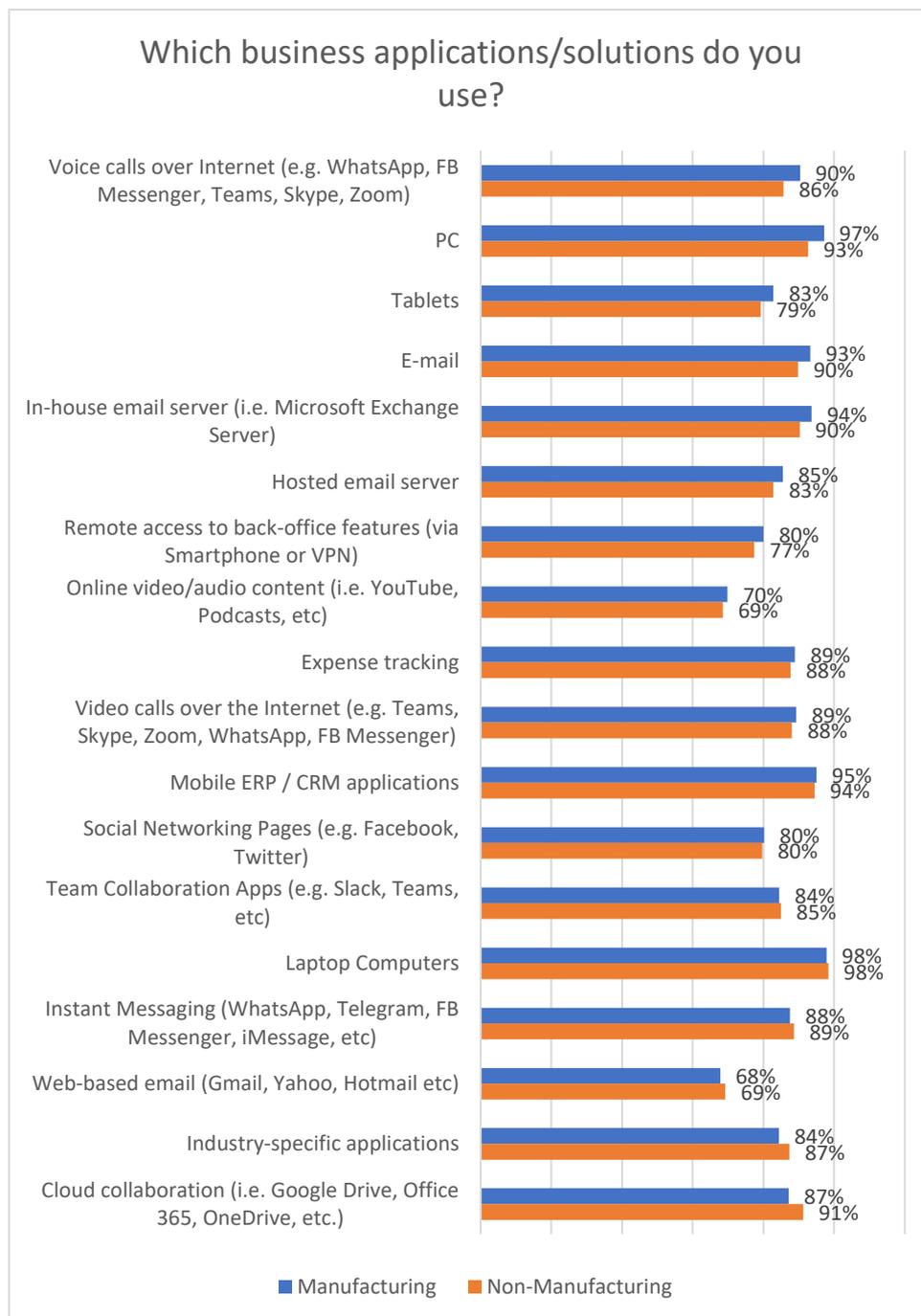
Which form of connectivity do you use – Split by manufacturing and non-manufacturing



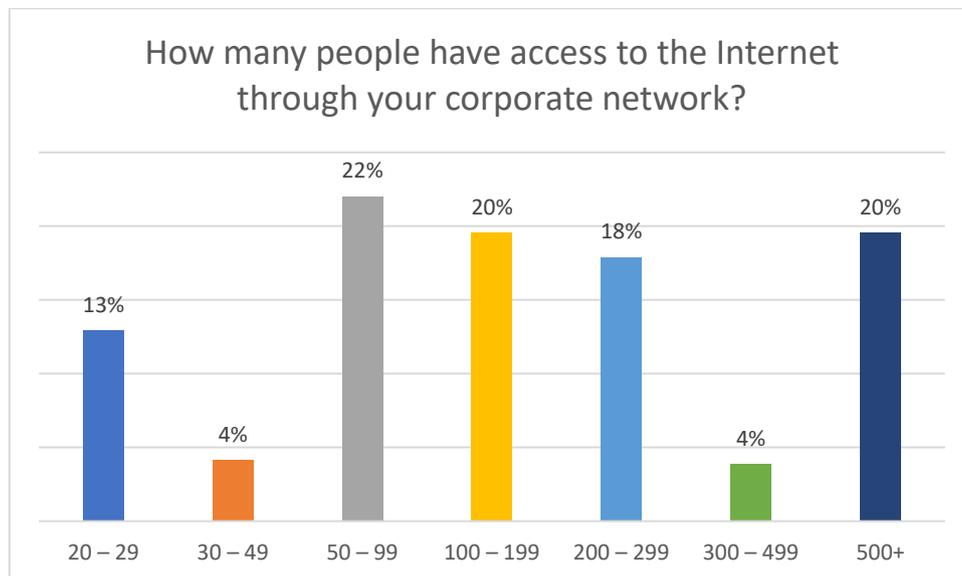
Which business applications/solutions do you use?



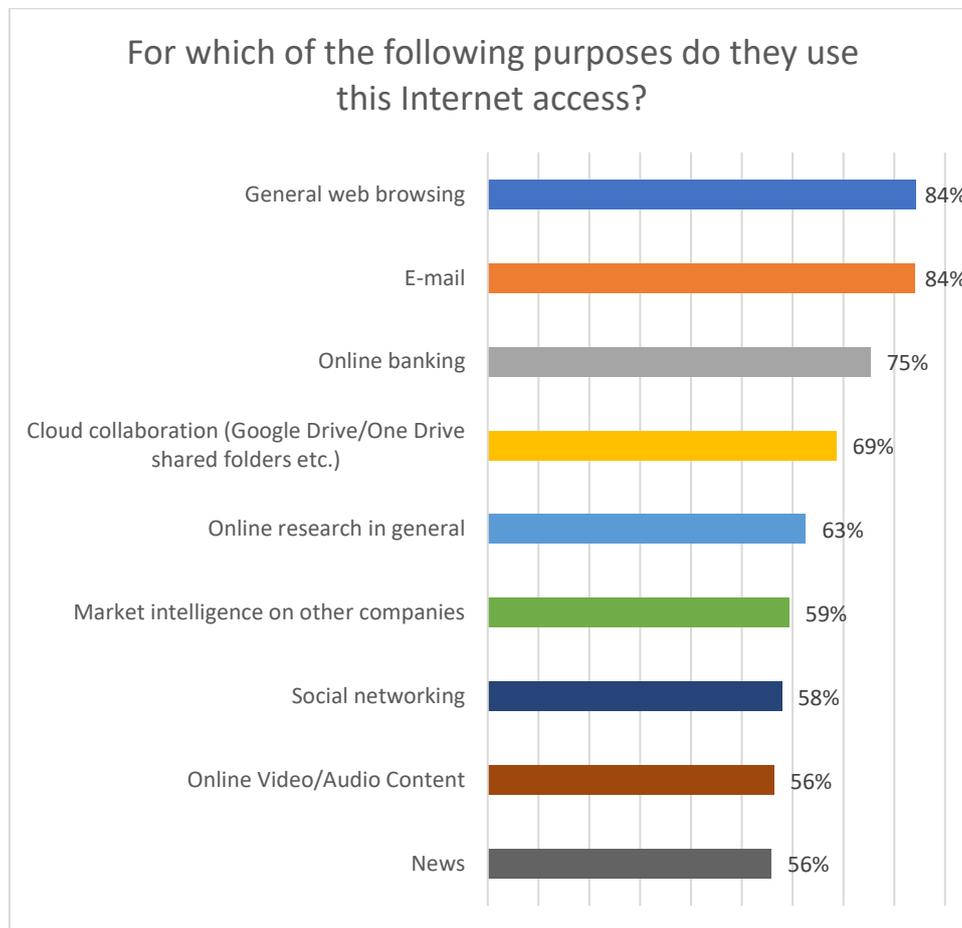
Which business applications/solutions do you use – Split by manufacturing and non-manufacturing



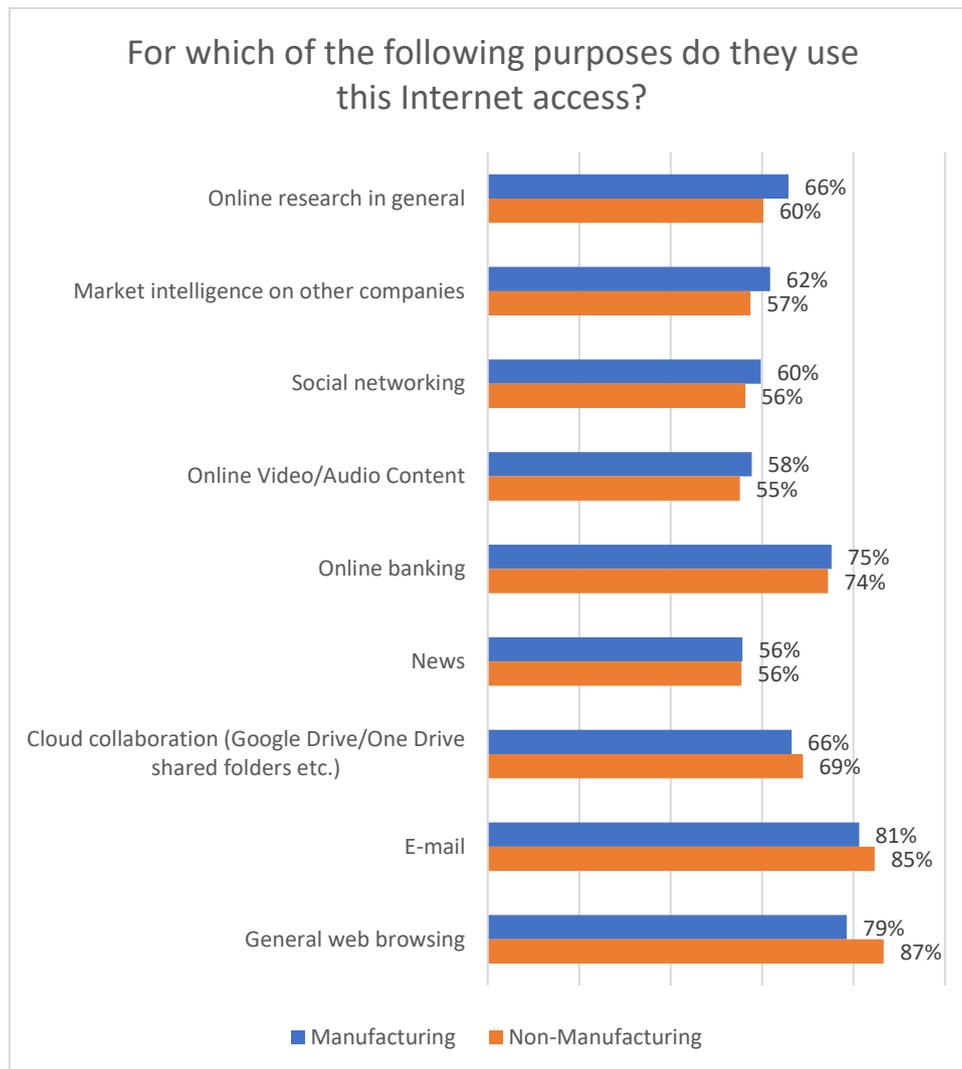
How many people have access to the Internet through your corporate network?



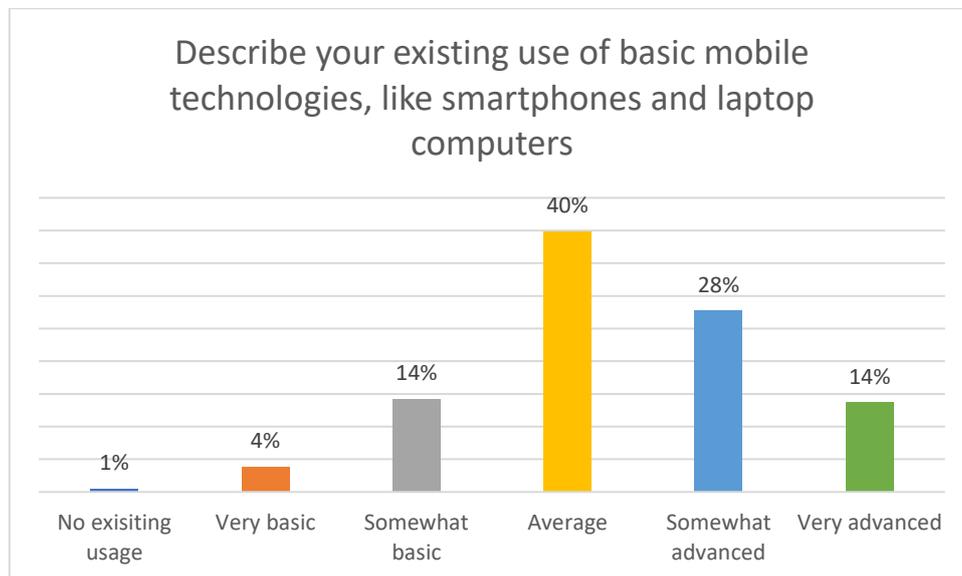
For which of the following purposes do they use this Internet access?



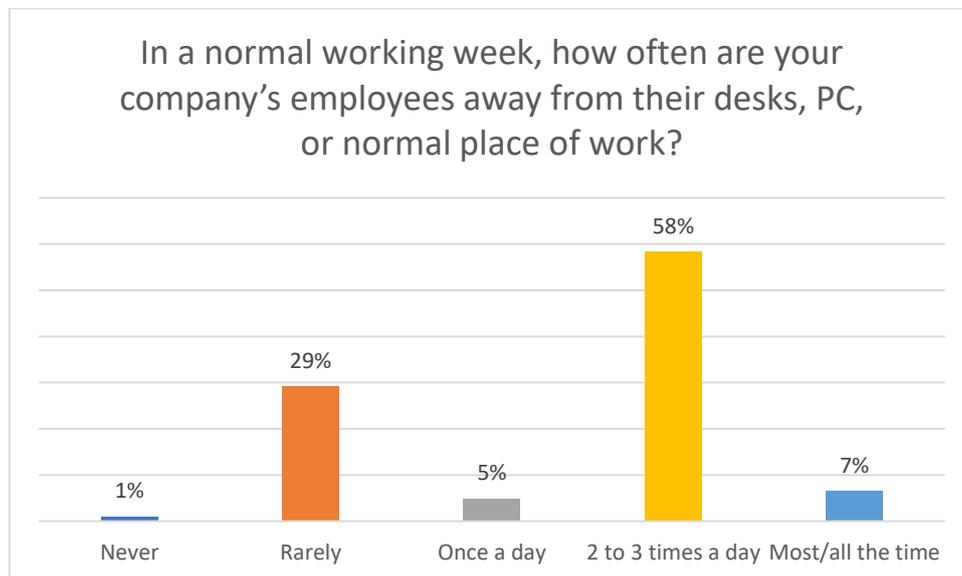
For which of the following purposes do they use this Internet access – Split by manufacturing and non-manufacturing



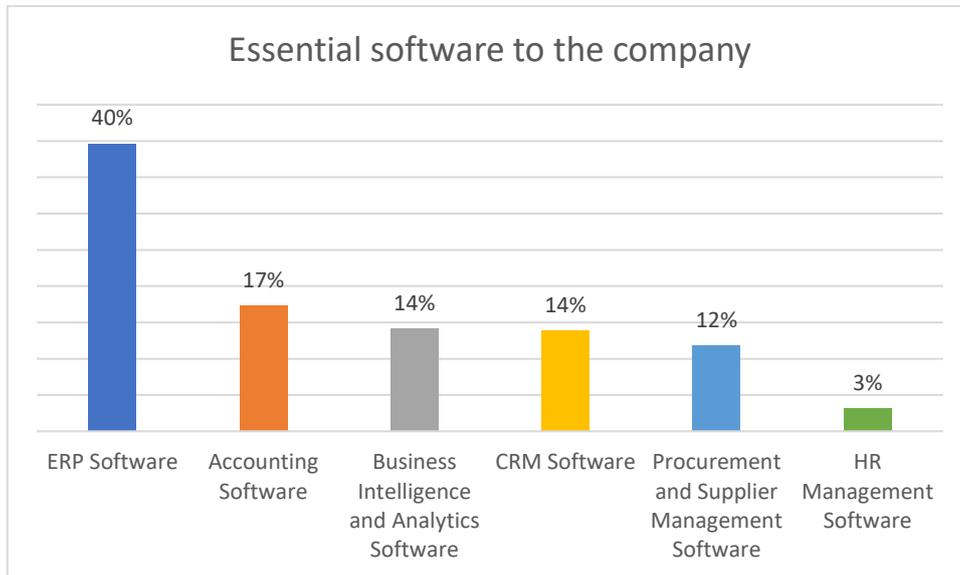
Describe your existing use of basic mobile technologies, like smartphones and laptop computers



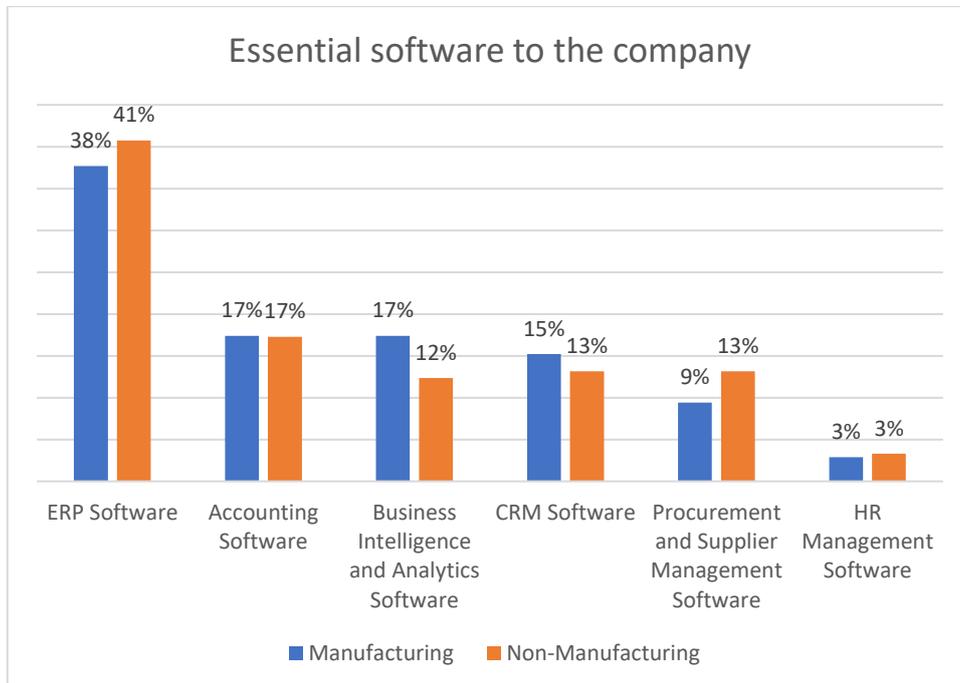
In a normal working week, how often are your company's employees away from their desks, PC, or normal place of work?



Essential software to the company

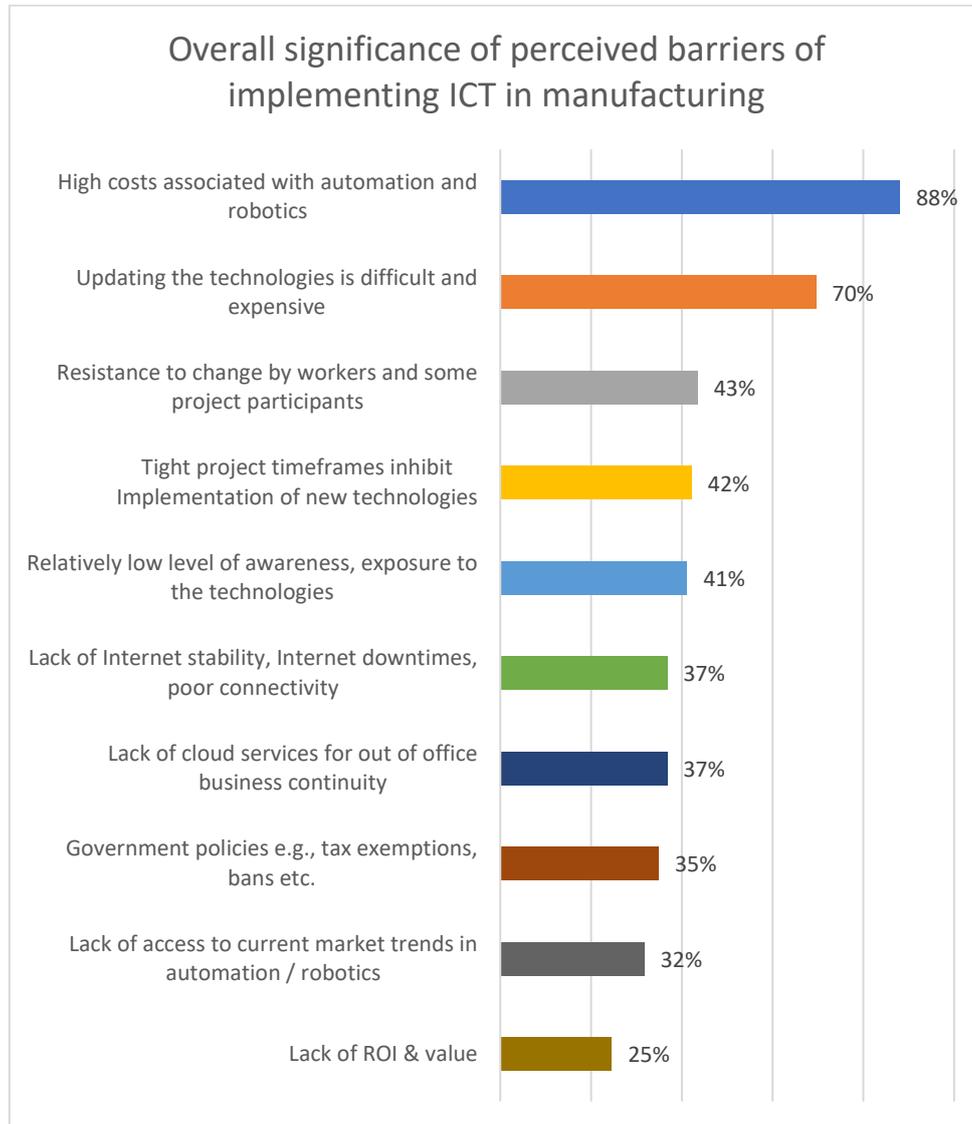


Essential software to the company– Split by manufacturing and non-manufacturing

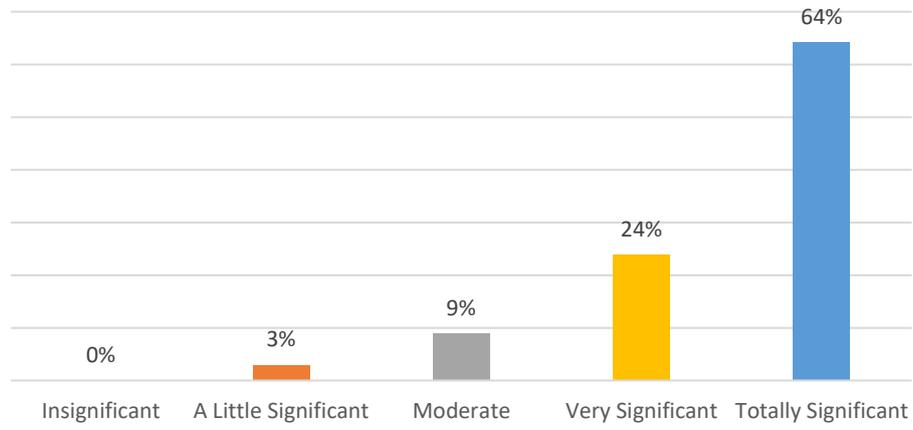


Manufacturing Specific Questions

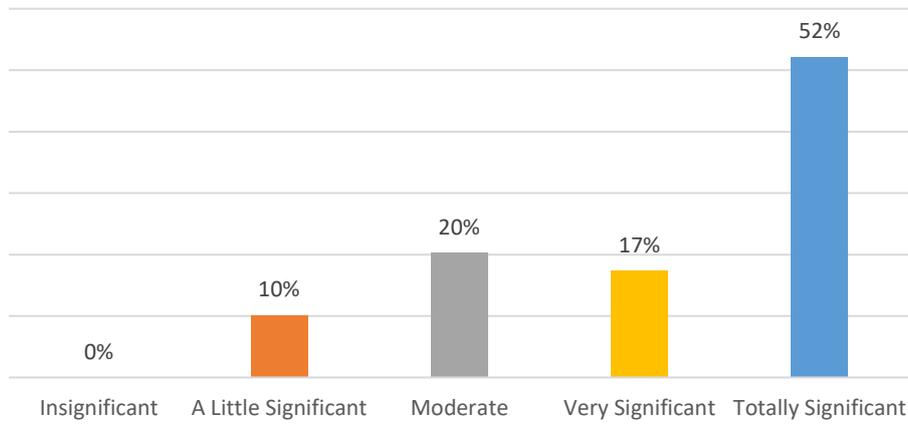
Overall significance of perceived barriers of implementing ICT in manufacturing



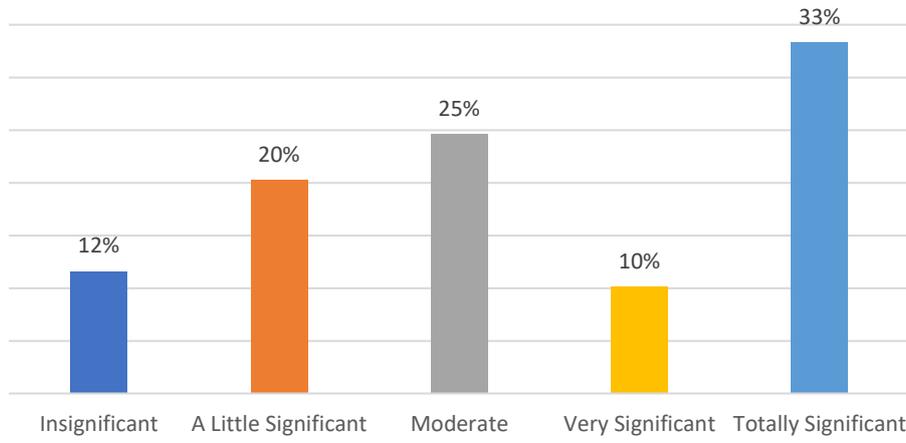
Barrier to implementation: High costs associated with automation and robotics application



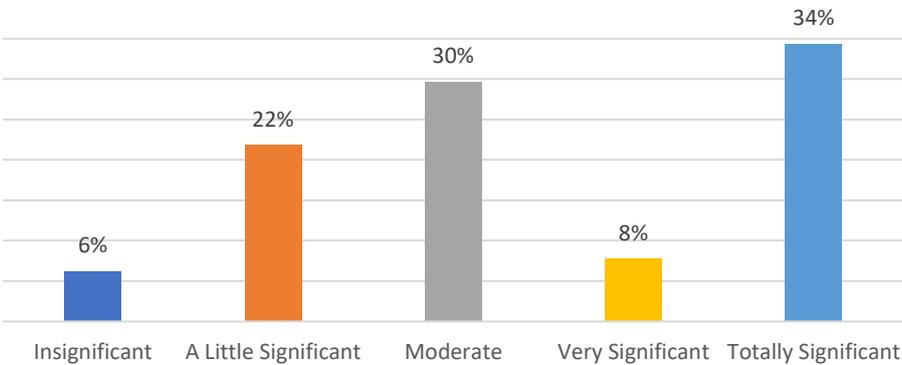
Barrier to implementation: Updating the technologies is difficult and expensive



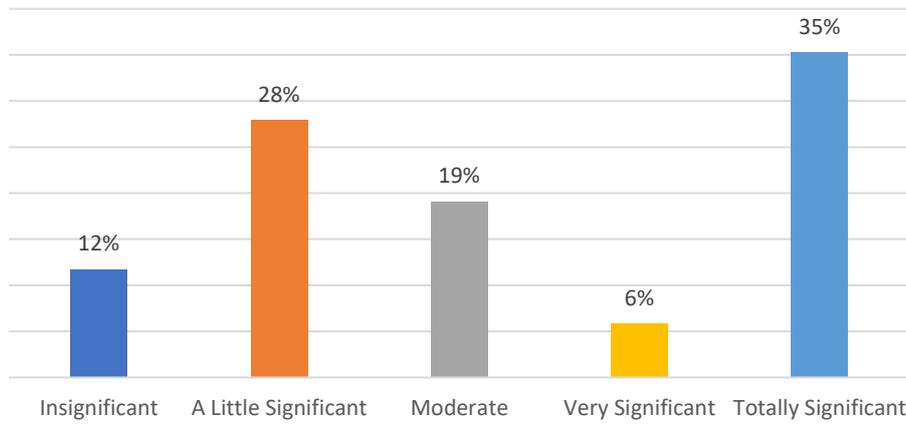
Barrier to implementation: Resistance to change by workers and some project participants



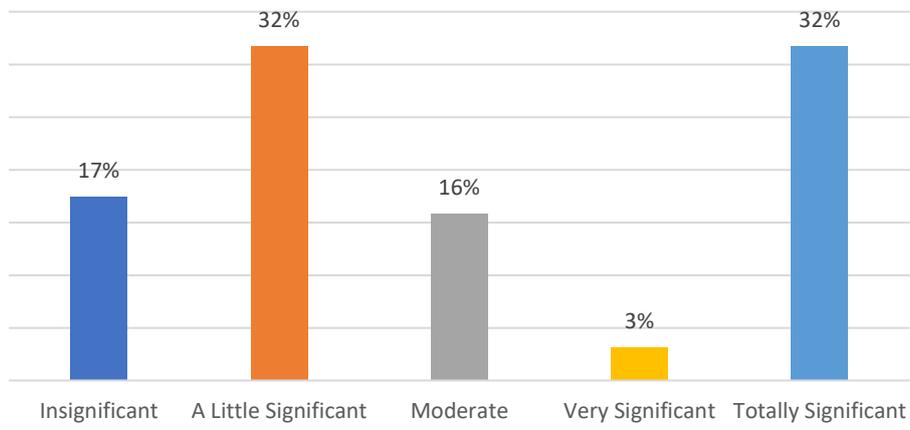
Barrier to implementation: Tight project timeframes inhibit Implementation of new technologies



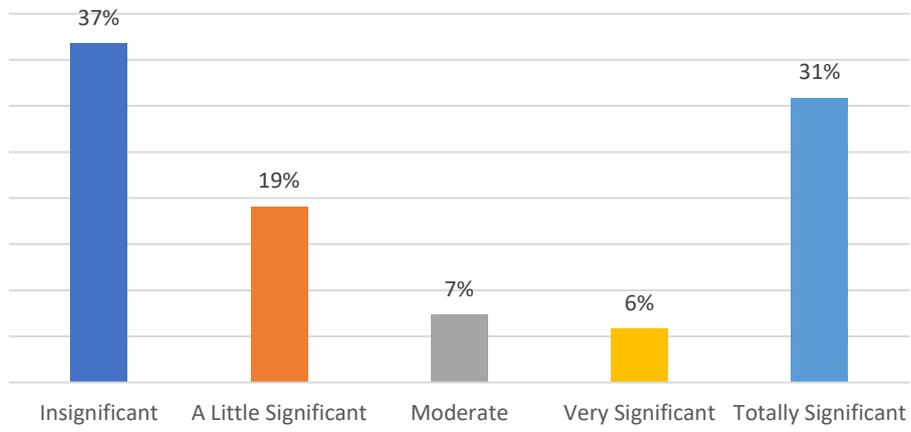
Barrier to implementation: Relatively low level of awareness, exposure to the technologies



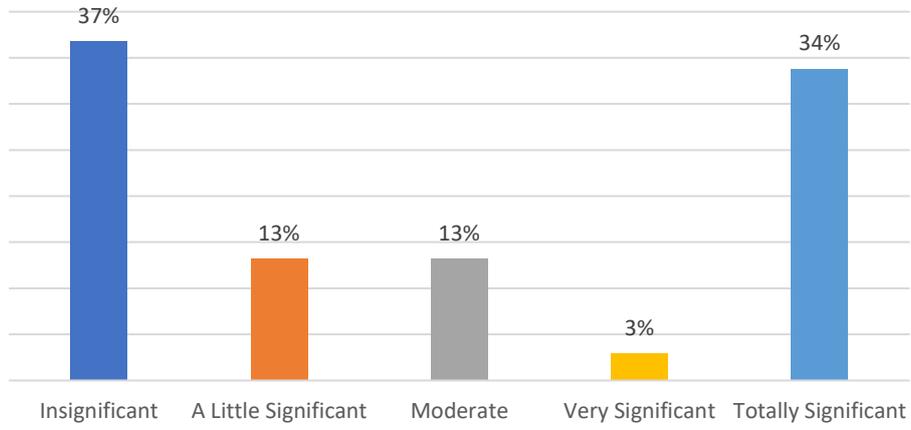
Barrier to implementation: Government policies
e.g., tax exemptions, bans etc.



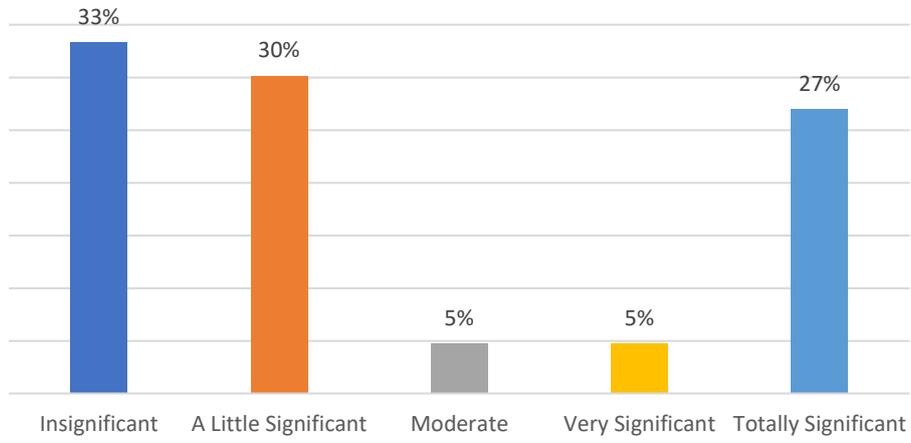
Barrier to implementation: Lack of Internet stability, Internet downtimes, poor connectivity



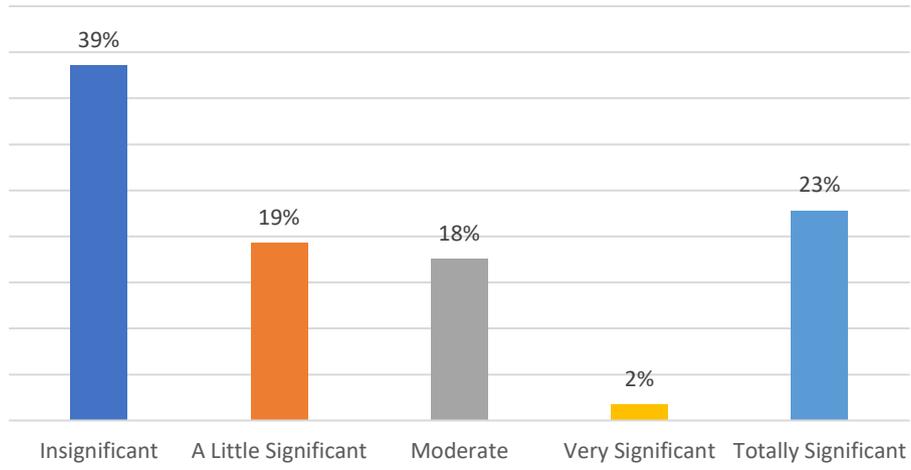
Barrier to implementation: Lack of cloud services for out of office business continuity



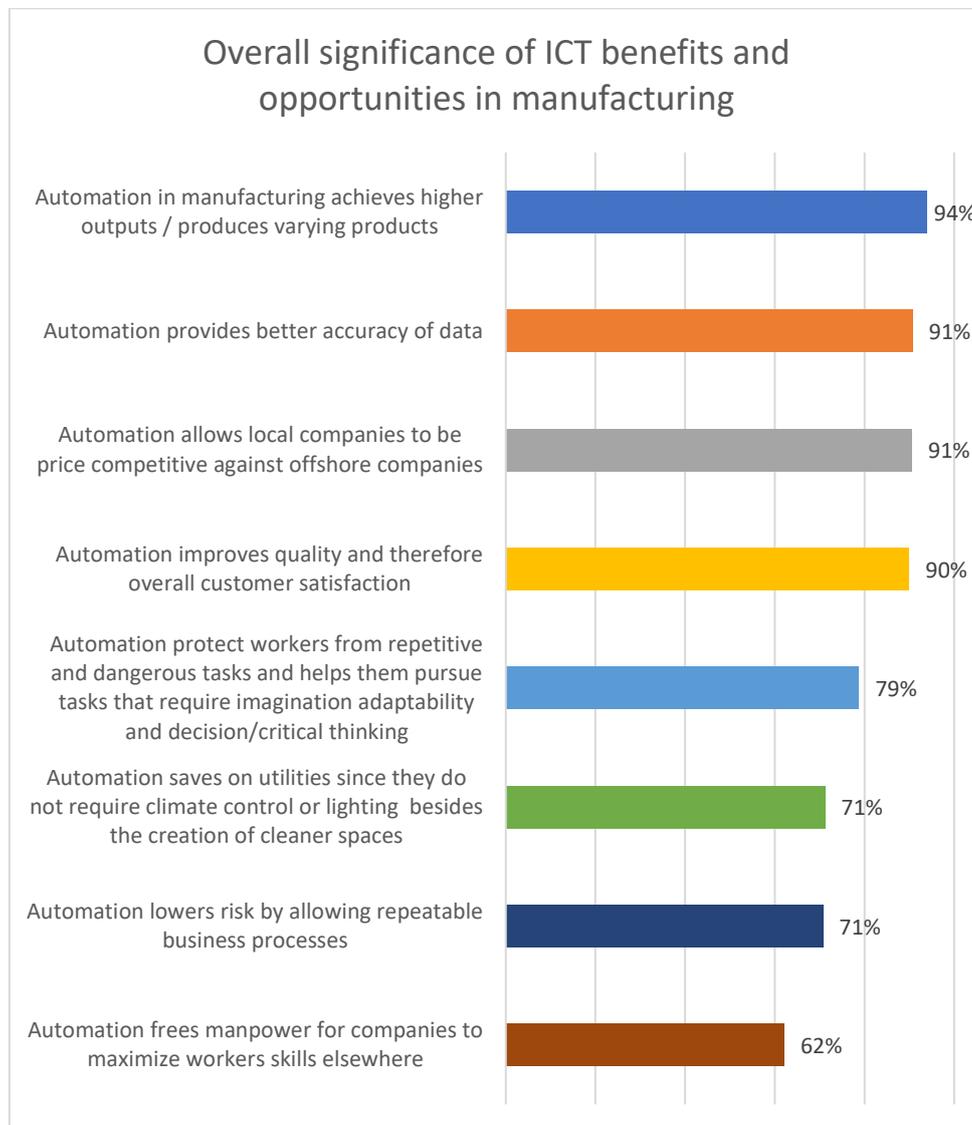
Barrier to implementation: Lack of access to current market trends in automation / robotics



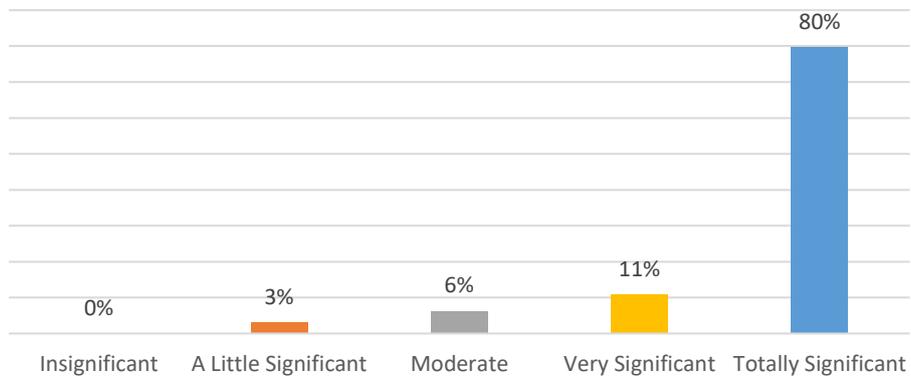
Barrier to implementation: Lack of ROI & Value



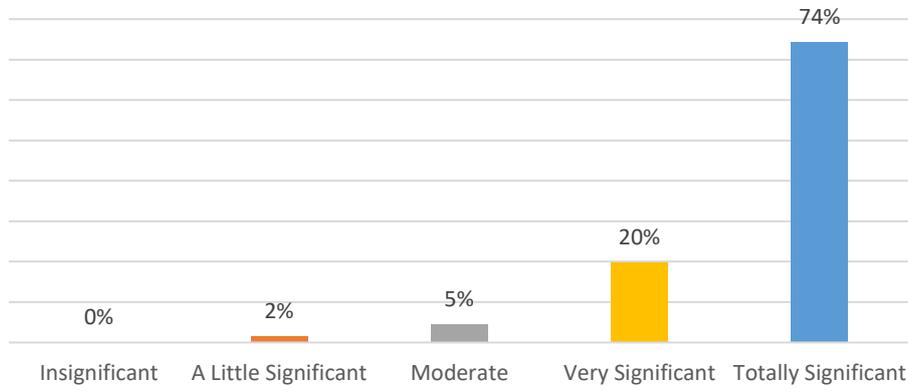
Overall significance of ICT benefits and opportunities in manufacturing



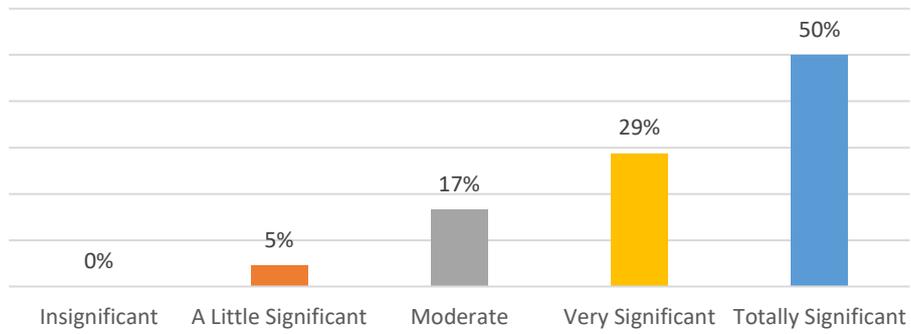
Benefits of implementation: Automation allows local companies to be price competitive against offshore companies



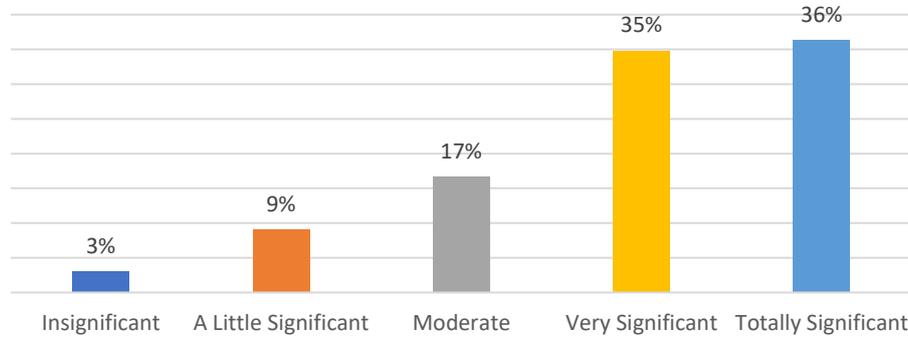
Benefits of implementation: Automation in manufacturing achieves higher outputs / produces varying products



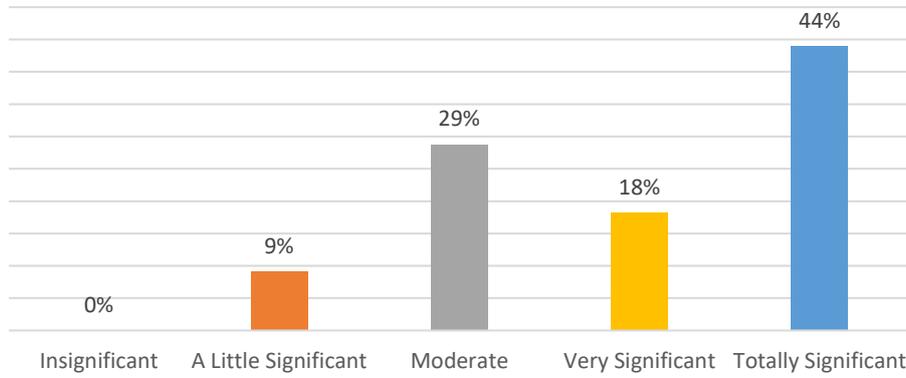
Benefits of implementation: Automation protect workers from repetitive and dangerous tasks and helps them pursue tasks that require imagination adaptability and decision/critical thinking



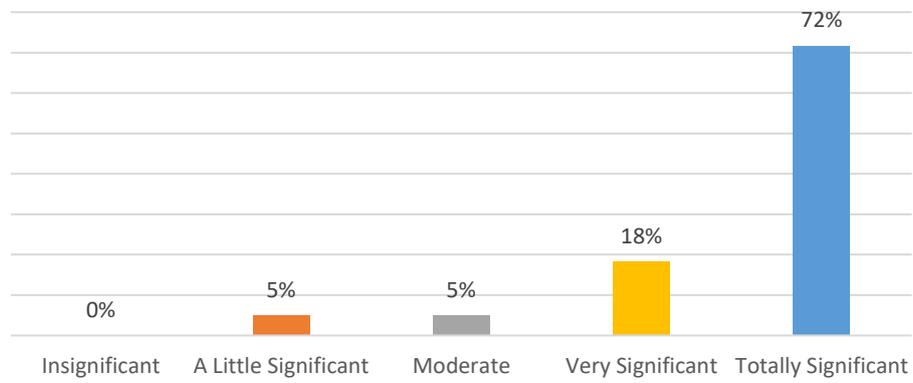
Benefits of implementation: Automation saves on utilities since they do not require climate control or lighting besides the creation of cleaner spaces



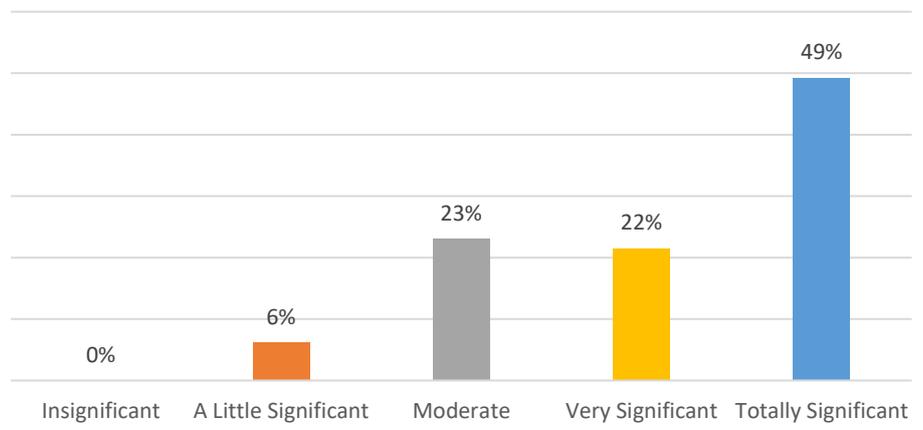
Benefits of implementation: Automation frees manpower for companies to maximize workers skills elsewhere



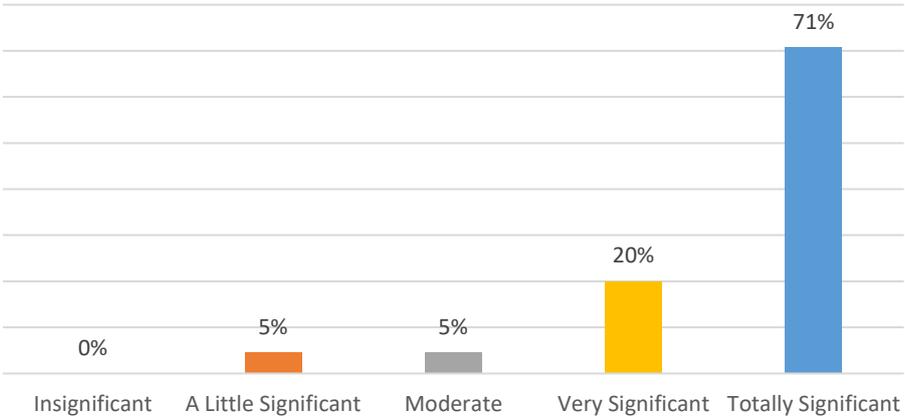
Benefits of implementation: Automation improves quality and therefore overall customer satisfaction



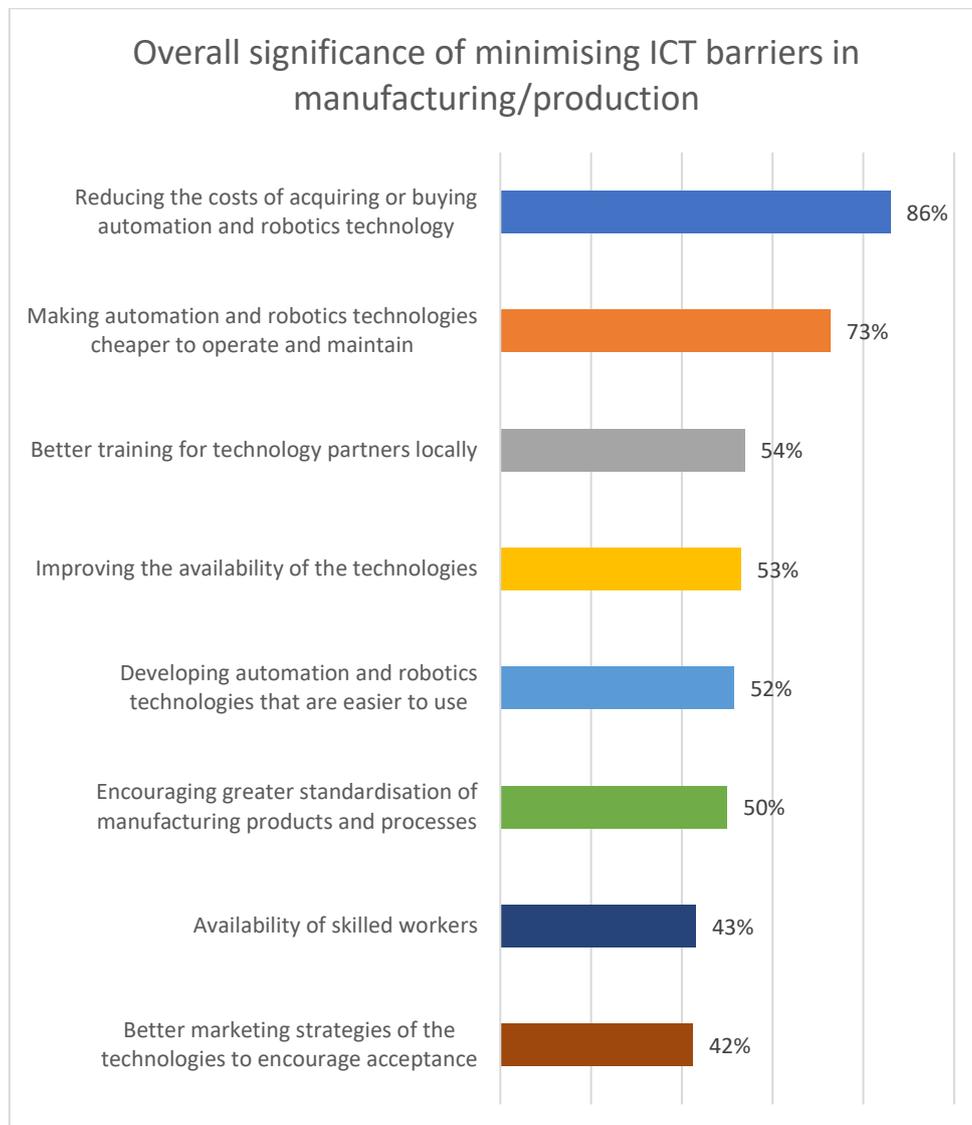
Benefits of implementation: Automation lowers risk by allowing repeatable business processes



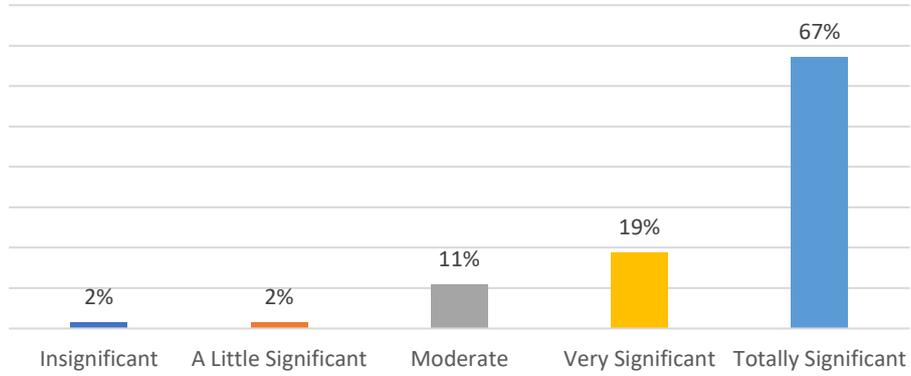
Benefits of implementation: Automation provides better accuracy of data



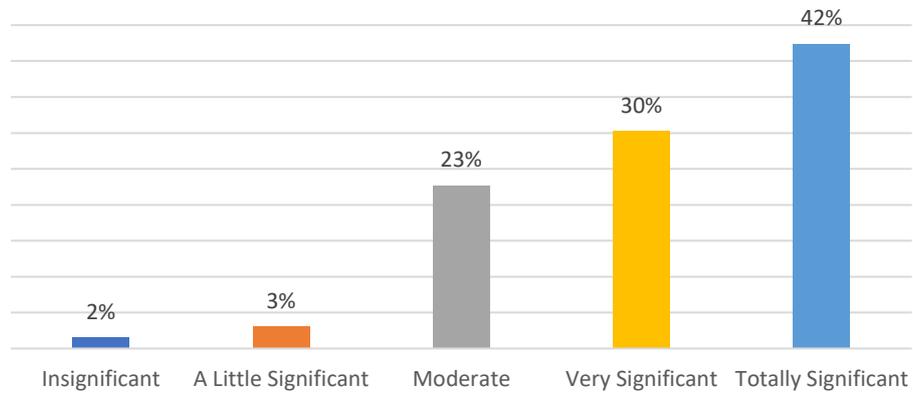
Overall significance of minimising ICT barriers in manufacturing/production



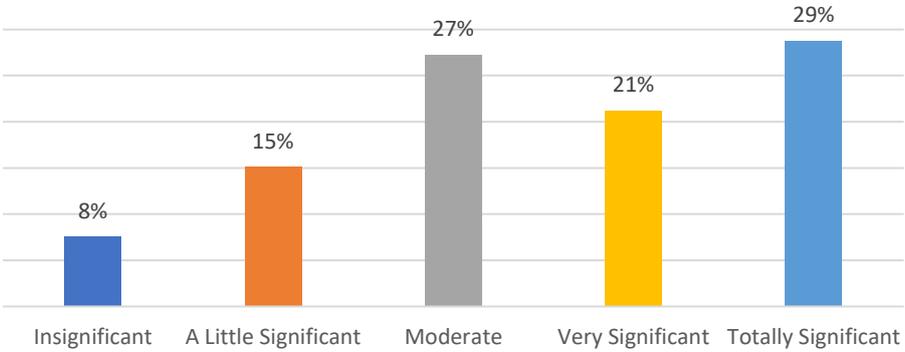
Minimising barriers: Reducing the costs of acquiring or buying automation and robotics technology



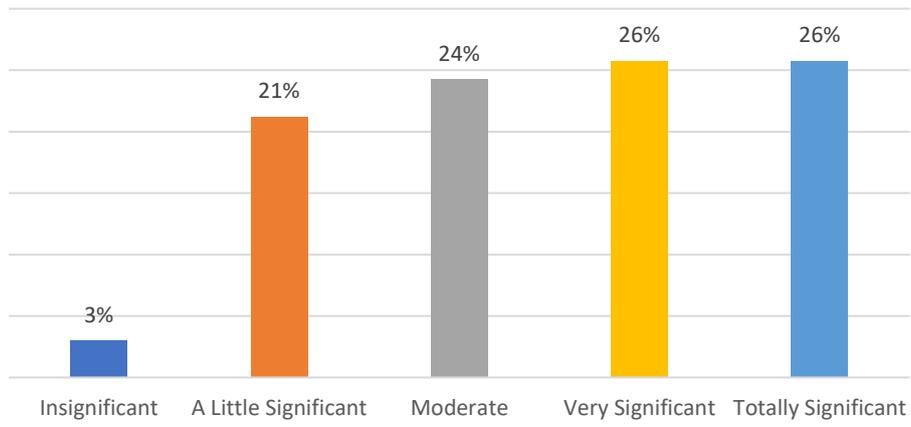
Minimising barriers: Making automation and robotics technologies cheaper to operate and maintain



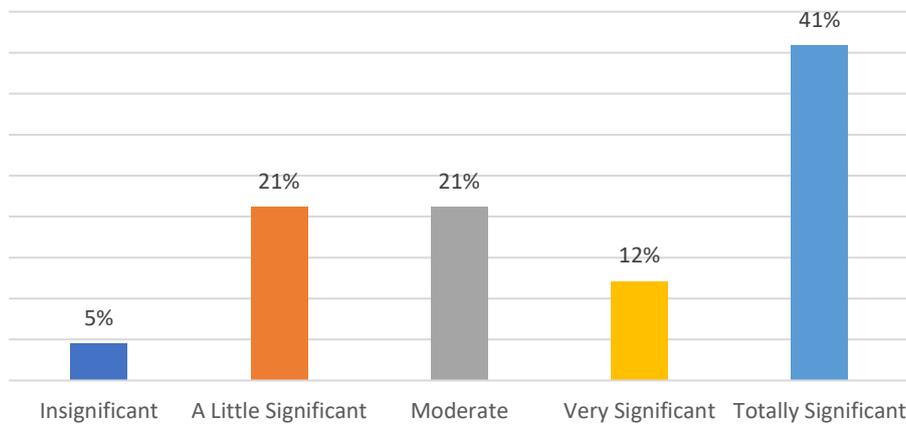
Minimising barriers: Encouraging greater standardisation of manufacturing products and processes



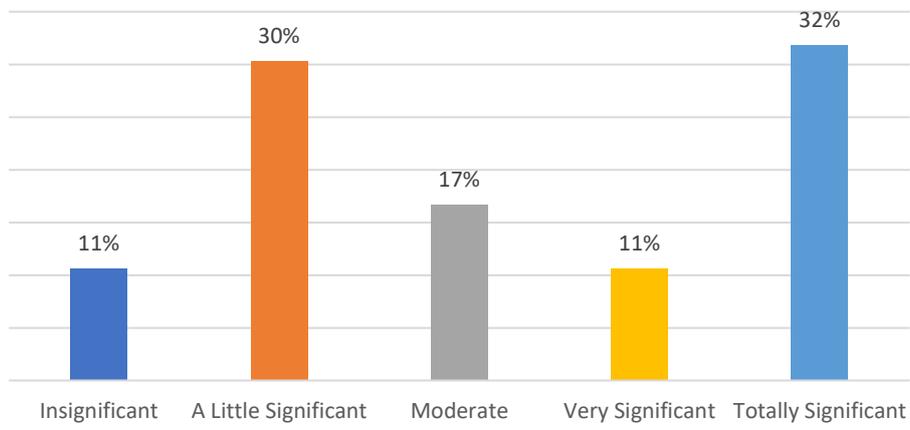
Minimising barriers: Developing automation and robotics technologies that are easier to use



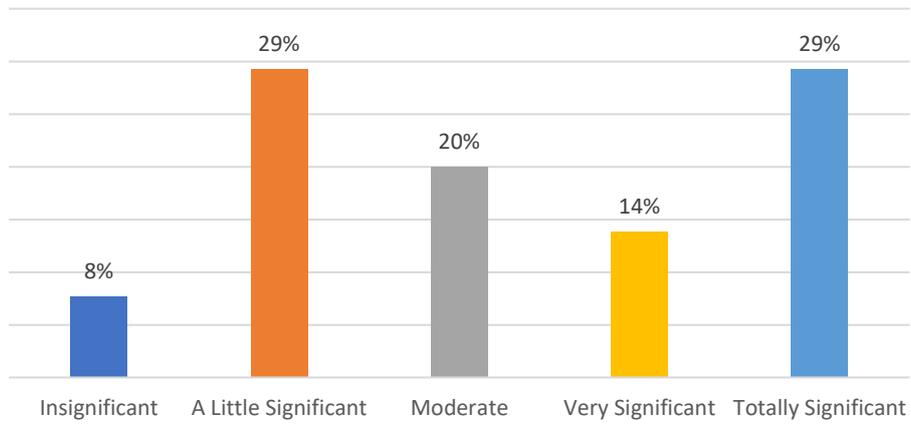
Minimising barriers: Improving the availability of the technologies



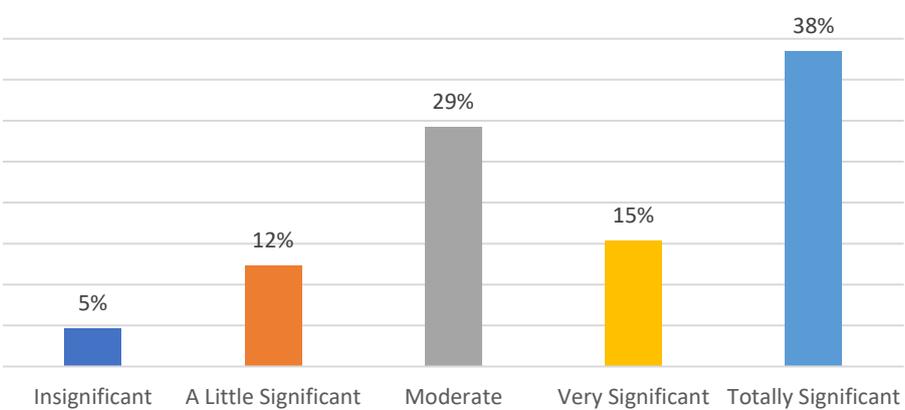
Minimising barriers: Better marketing strategies of the technologies to encourage acceptance



Minimising barriers: Availability of skilled workers

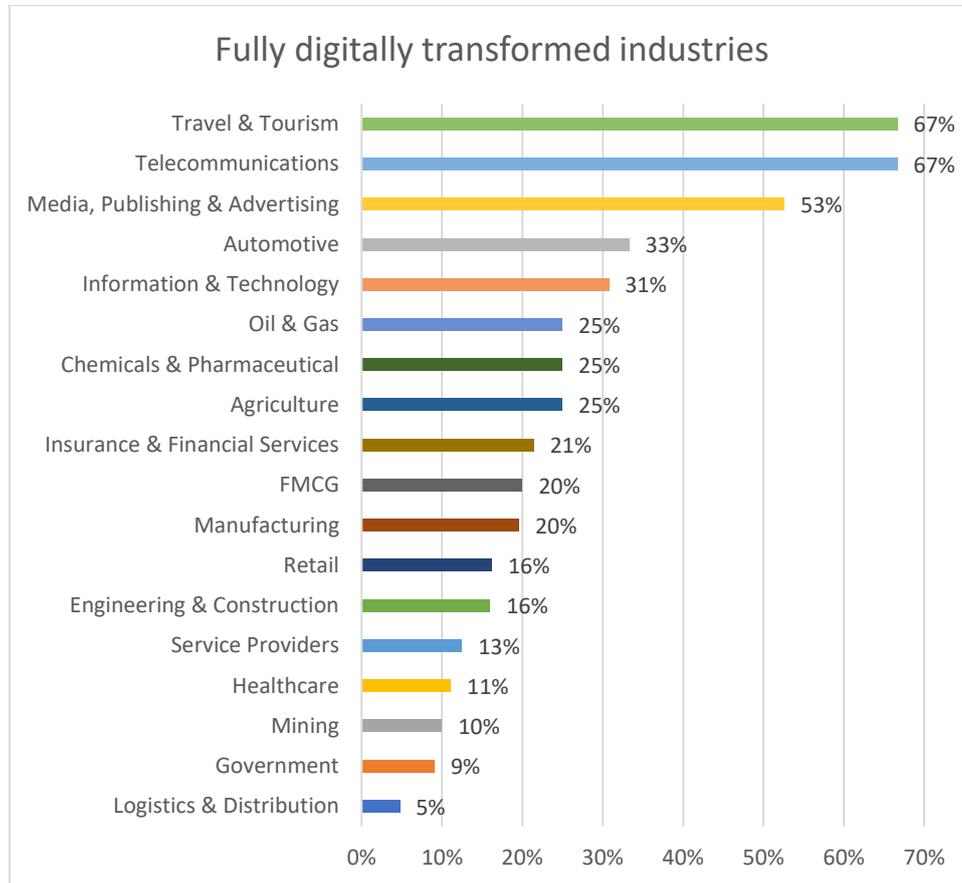


Minimising barriers: Better training for technology partners locally

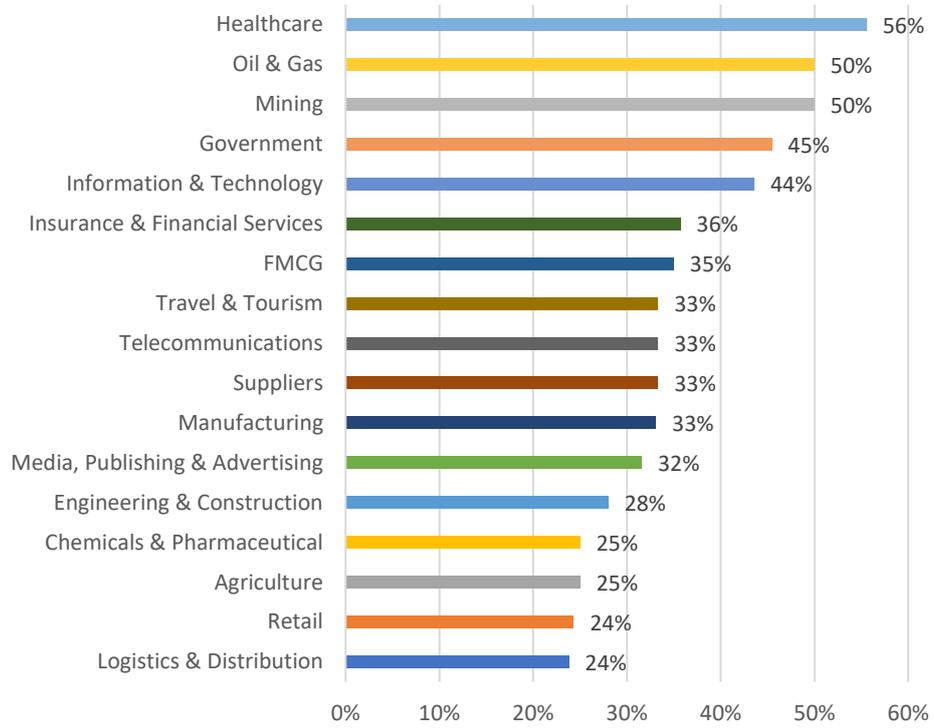


Digital Corporation – Crosstabs

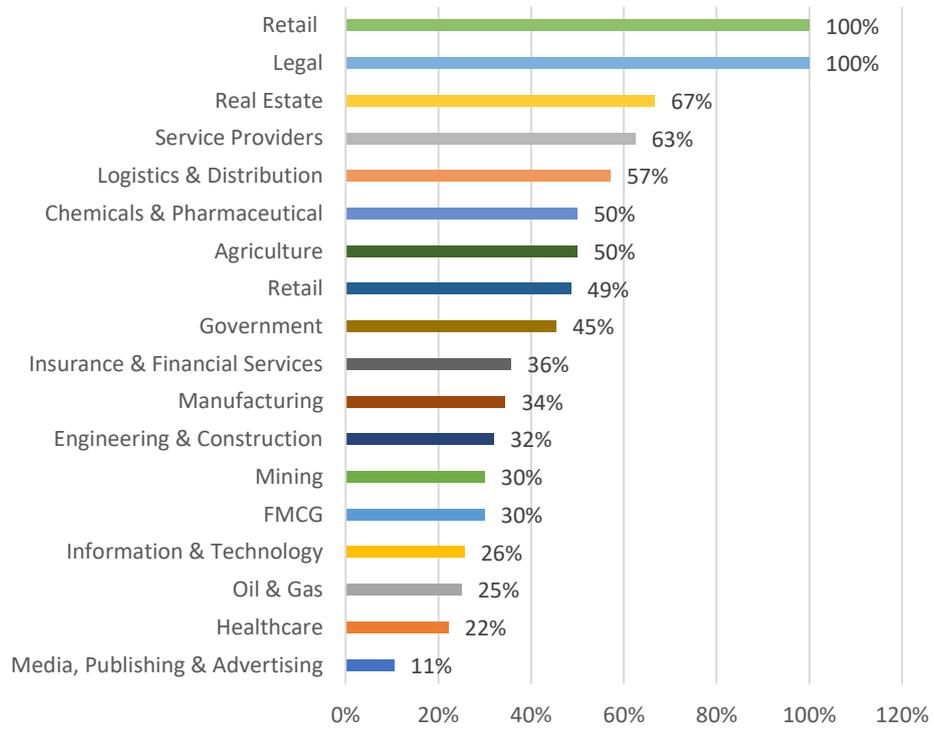
Digital transformation across industries



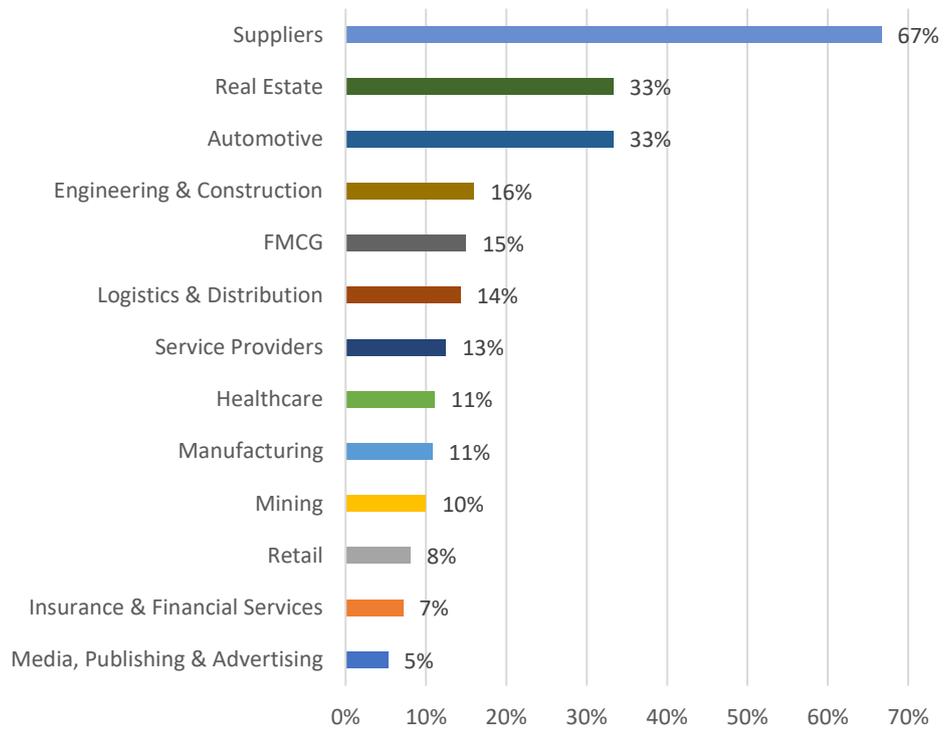
Industries with advanced digital transformation but not fully transformed



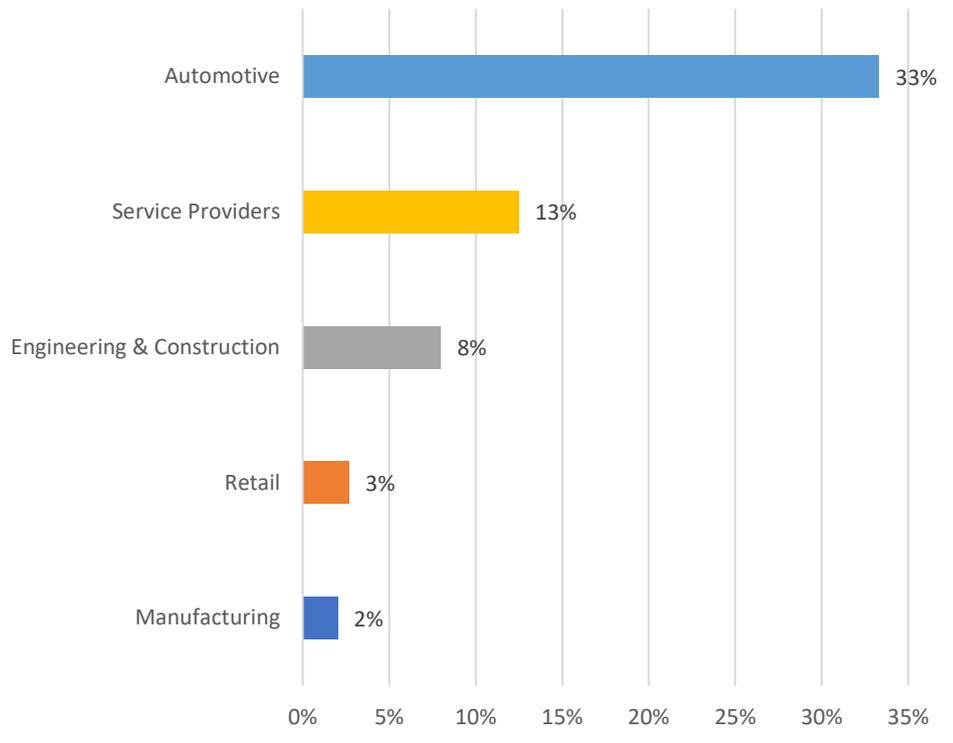
Industries that are in early stages of digital transformation



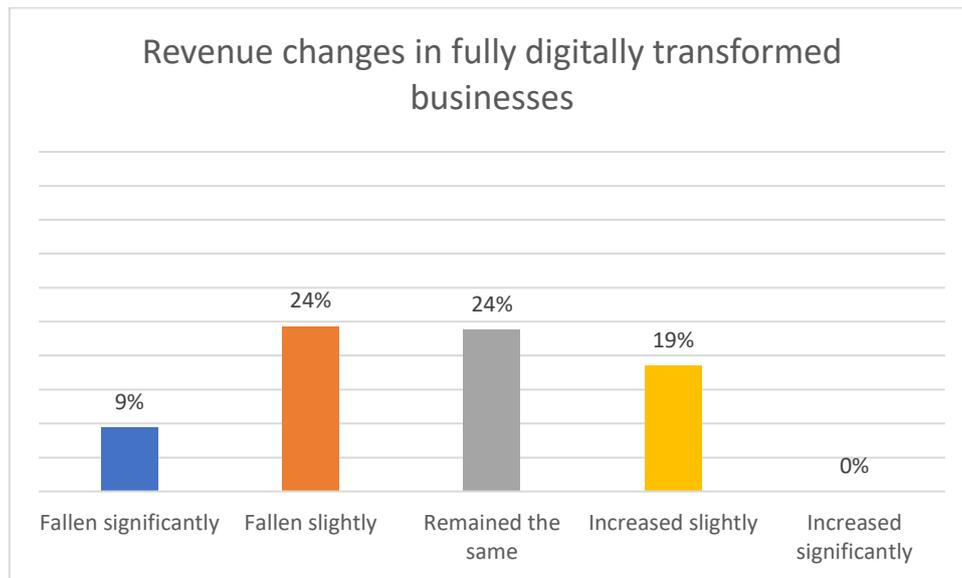
Industries that have planned their digital transformation but not implemented



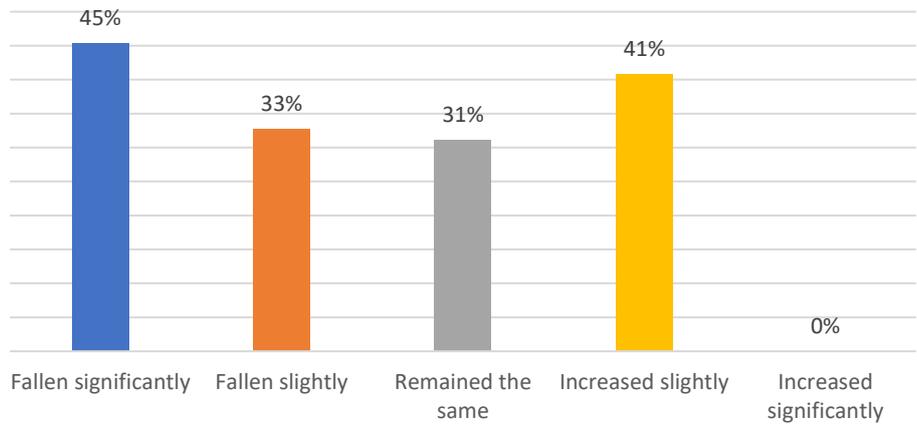
Industries that have not yet started digital transformation journey



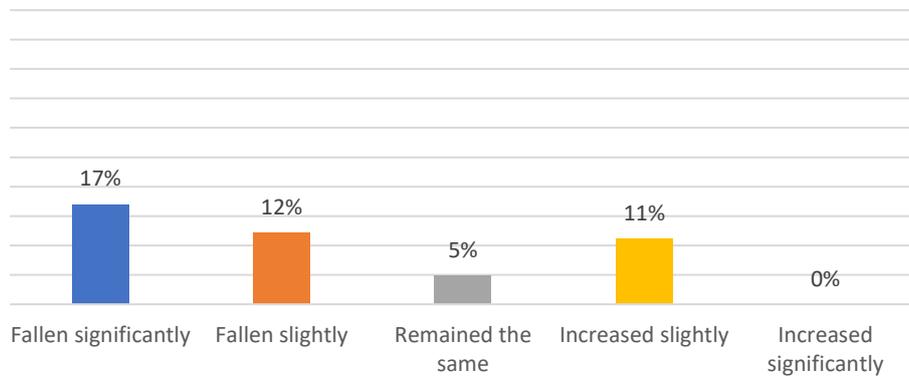
How digital transformation affects revenue changes



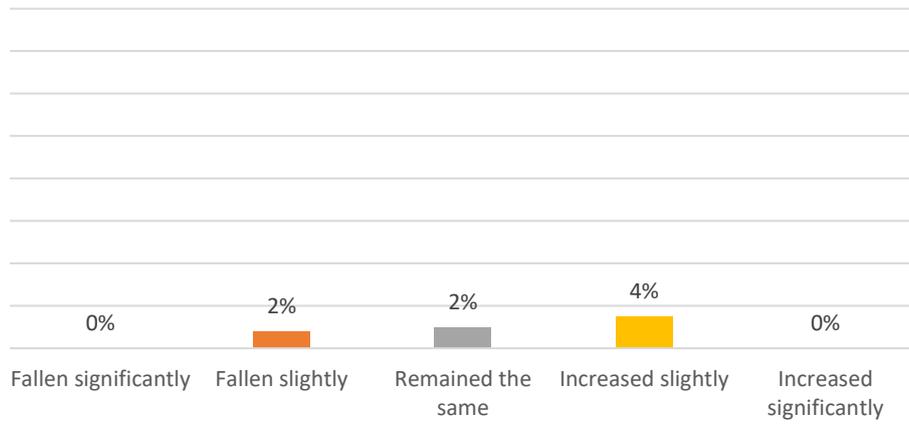
Revenue changes in early stage digitally transformed businesses



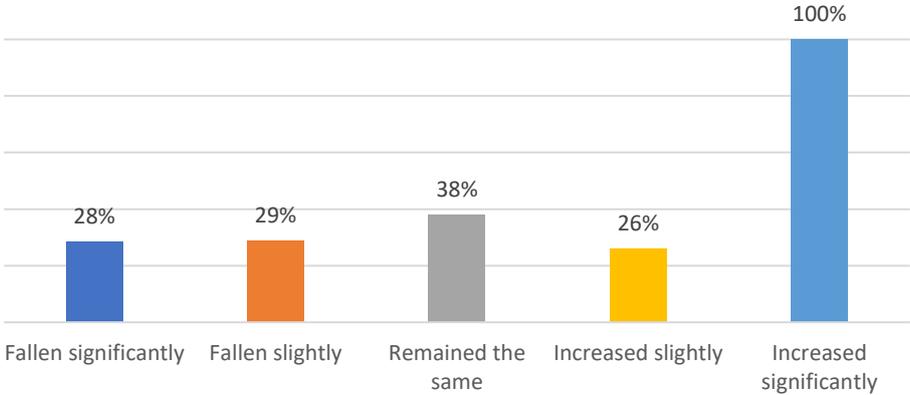
Revenue changes in businesses that have planned their digital transformation but not implemented



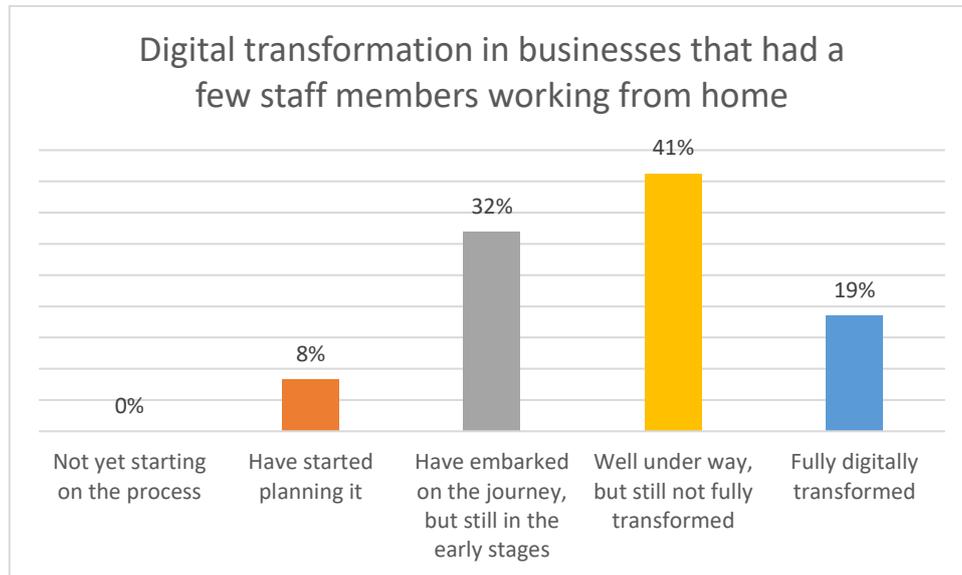
Revenue changes in businesses that have not yet started digital transformation



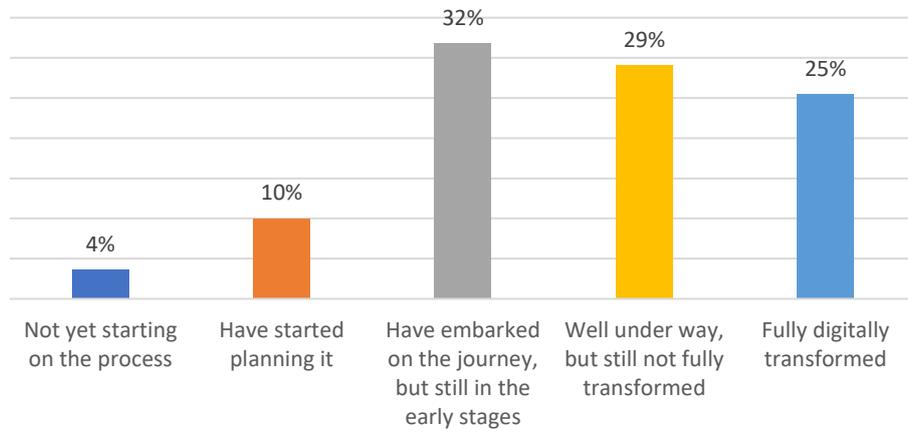
Revenue changes in businesses with advanced digital transformation but not fully transformed



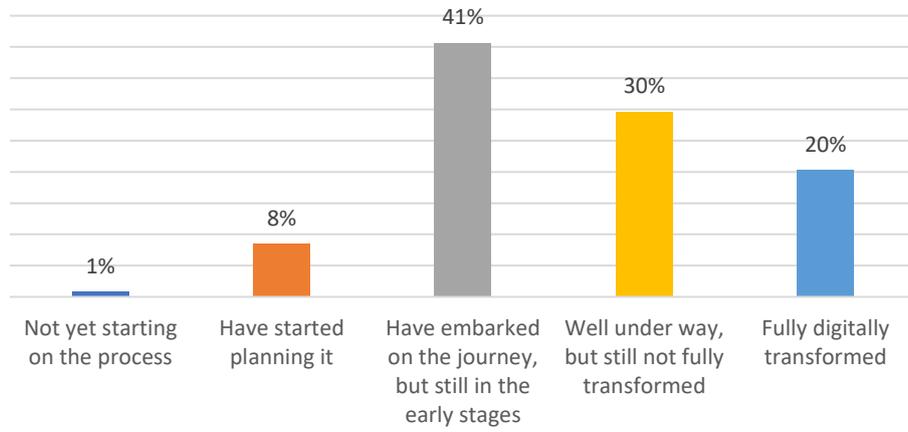
How digital transformation affects remote work since the pandemic



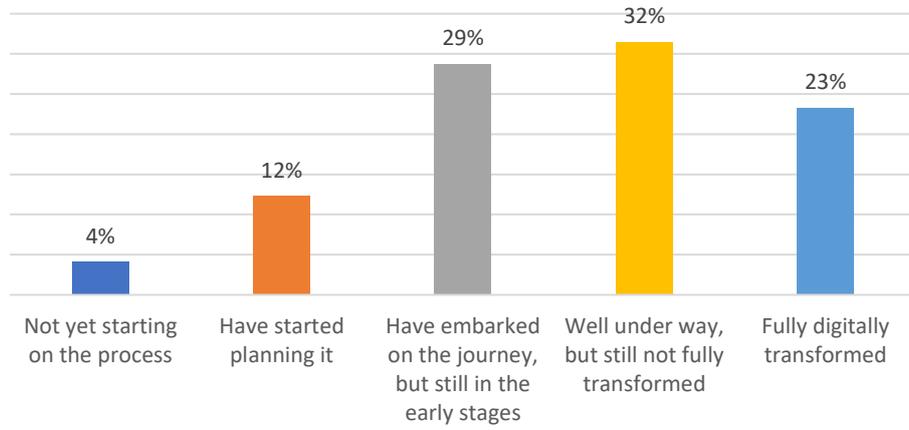
Digital transformation in businesses that had half their staff members working from home



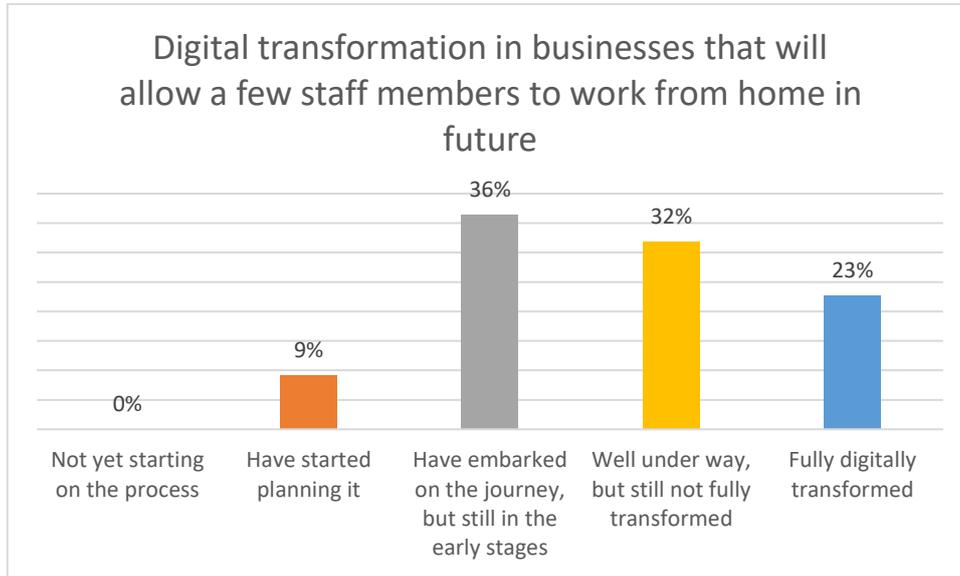
Digital transformation in businesses that had all but skeleton staff working from home



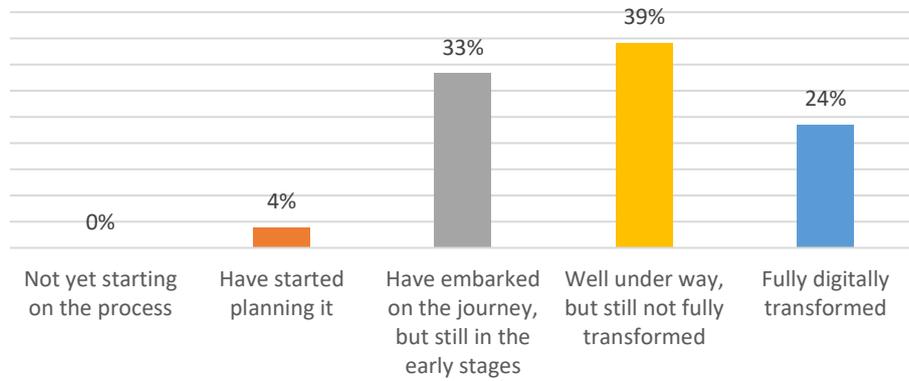
Digital transformation in businesses that had all staff working from home



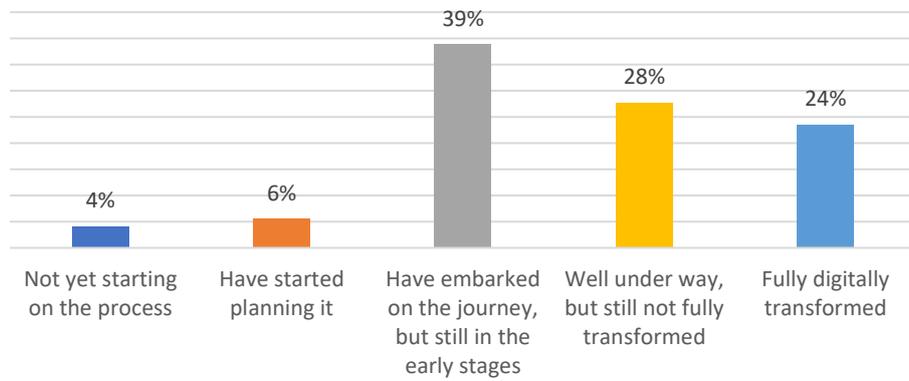
How digital transformation will remote work after the pandemic



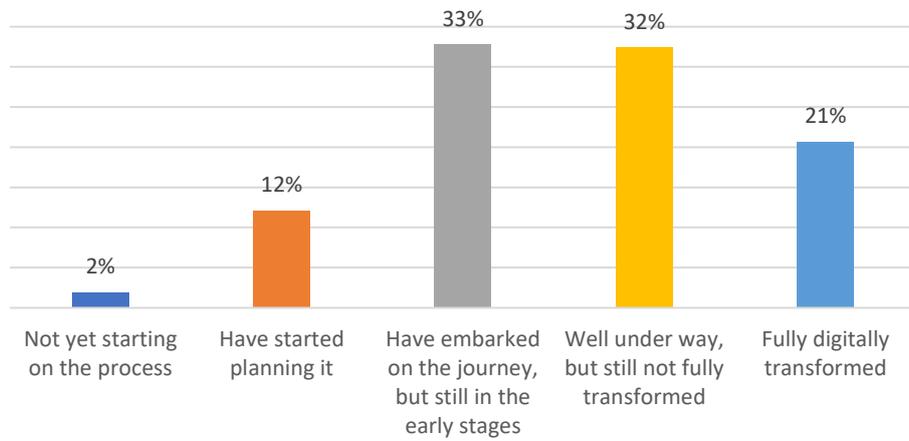
Digital transformation in businesses that will allow a half of their staff members to work from home in future



Digital transformation in businesses that will allow all but skeleton staff to work from home in future



Digital transformation in businesses that will allow all staff to work from home in future



How changes in ICT investment affected digital transformation since lockdown

