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The connected worker
Charging up the business
services workforce

May 2018

About this research

The connected worker is defined as any person whose working life is changing due to digital and other technologies.

The report is based on a combination of interviews and data collected from senior representatives of business services companies in the UK, secondary data as well as a UK business services worker survey carried out online by an independent market research agency on behalf of Deloitte.
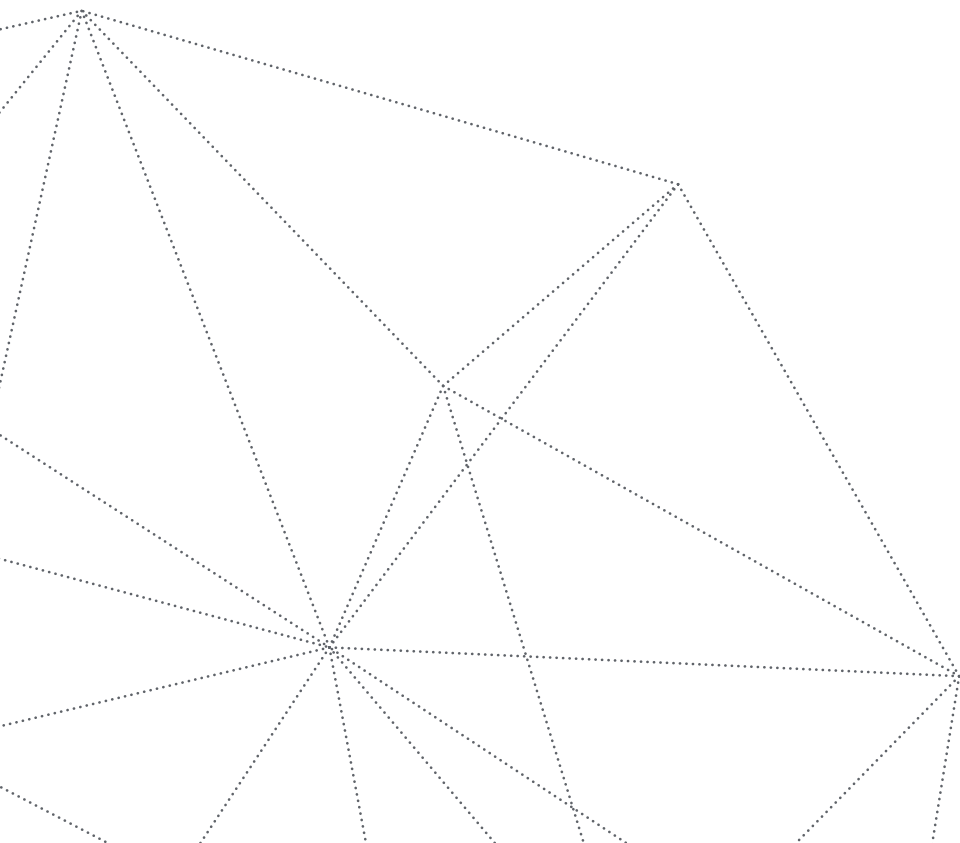
The worker survey was conducted in April 2018. It gathered views from 640 workers. Two-thirds of the respondents are manual or semi-skilled (social grades C2/D, referred to as manual workers) and one-third are lower level supervisors or administrative workers (social grade C1, referred to as administrative workers). In the report we refer to these groups together as business services workers. The respondents all work in the business services sector, such as facilities management, business process and public sector outsourcing, construction, food and catering services, and distribution and logistics. The analysis covered over 100 respondents from each of these sub-sectors.

In this publication, references to Deloitte are references to Deloitte LLP, the UK affiliate of Deloitte NWE LLP, a member firm of Deloitte Touche Tohmatsu Limited.

Please visit **www.deloitte.co.uk/connectedworker** for additional content.

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Foreword

Welcome to the second edition of *The connected worker* which examines how increasing use of technology can improve efficiency and productivity in the UK's business services sector.

Business services covers a range of sub-sectors such as business process outsourcing, construction, facilities management, catering and food services, as well as logistics and distribution. While companies in the sector may operate in different ways, what brings them together is the fact that they employ a large number of people to carry out often labour-intensive, manual tasks, usually for a third party.

The sector is facing challenges with margins under increasing pressure from rising labour costs as well as clients looking to reduce their own costs. Some sub-sectors are also seeing a range of new competitors enter the market with more efficient service models, often enabled by the latest technology.

In addition, there are concerns that the supply of labour could be reduced in the future, especially after the UK has left the EU. Companies employing manual workers are seeing fewer school-leavers interested in jobs in business services, as they are aiming for more science and technology-based careers. This could mean that sectors that are slow to adopt the latest technologies, such as business services, could struggle to attract sufficient numbers of workers in the future.

The first *Connected worker* report explored how white and blue collar workers differed in their use of technology at and outside work. This second edition focuses specifically on business services and discusses how the sector is suffering from poor productivity growth. It explains the importance of investing in technology to be competitive and, indeed, profitable in the future. The report describes how better use of data can enable businesses not only to improve their efficiency, but employee engagement as well.

The time to innovate is now. While some companies may be financially constrained, there are numerous payment models that can reduce their capital investment. There are also technologies that can quickly improve productivity, and recover the investment over a short period of time.

This report includes case studies highlighting how technology can improve productivity and the benefits that can be achieved. It also provides the employee perspective and insights on how the lack of technology is impacting the productivity of the sector's workers.

We hope you find this report useful in informing your thinking and look forward to hearing your feedback.
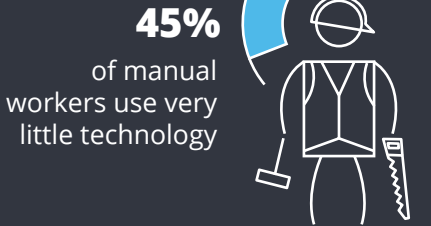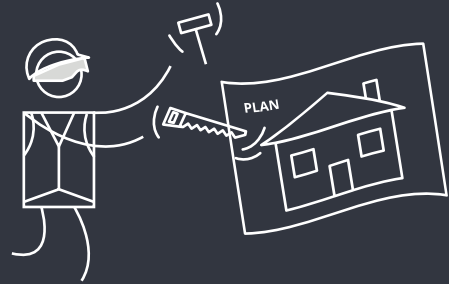
James Yearsley
UK lead partner
Services

Executive summary

How much technology does your workforce use?

13% of business services workers use no digital devices at work

45% of manual workers use very little technology
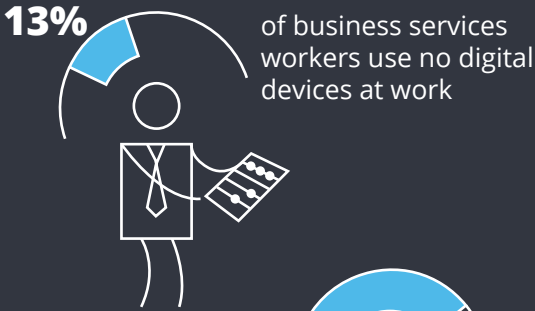
Technology can improve productivity, and make your workforce happier...

...it can make them more productive

On average each worker loses 2.8 hours per working week

That's

8% of working time...
Lost!

Workers see the benefits of technology...

48% say it would make their job easier

47% believe it would make them work faster

Your workforce is ready to embrace new technology...
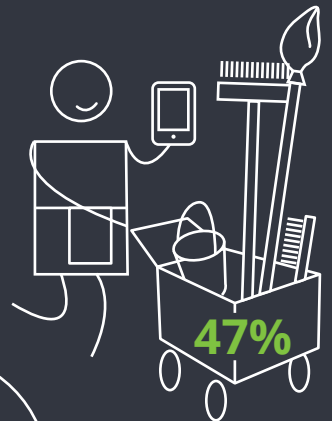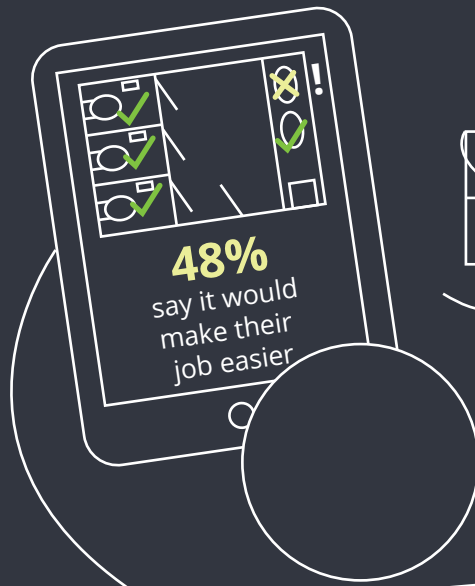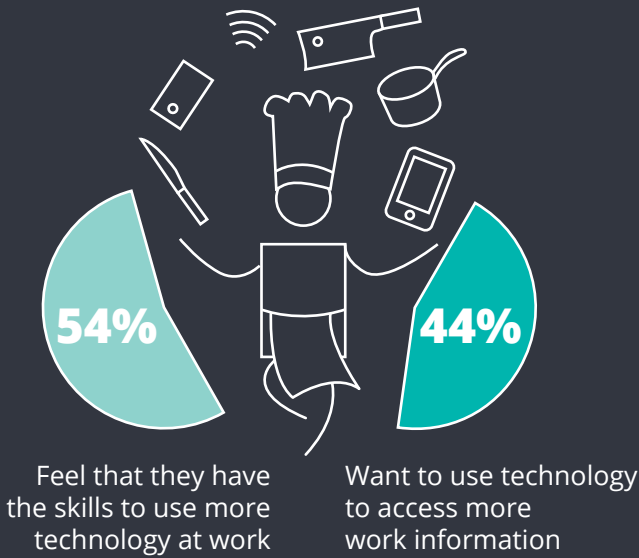
...and they are happy to share their data

54%

Feel that they have the skills to use more technology at work

44%

Want to use technology to access more work information

50%

are comfortable with their employer collecting data about the work they do
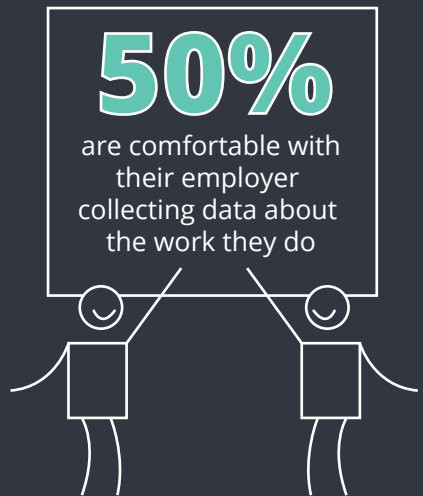
...but this has to be managed carefully

When it comes to working alongside robots or AI...

Only **3** in **10**

...business services workers feel comfortable

If they knew how technology could help their work

63%

would be more positive about it

Demystifying these new technologies is key.

The big picture:
Margin pressures
and talent challenges

Continuing pressure on margins and the challenges in attracting new generations of workers mean business services need to improve productivity and efficiency to be profitable in the future.

The business services sector: A major employer

The business services sector is a significant contributor to the UK economy. It has grown to account for 9.3 per cent of gross value added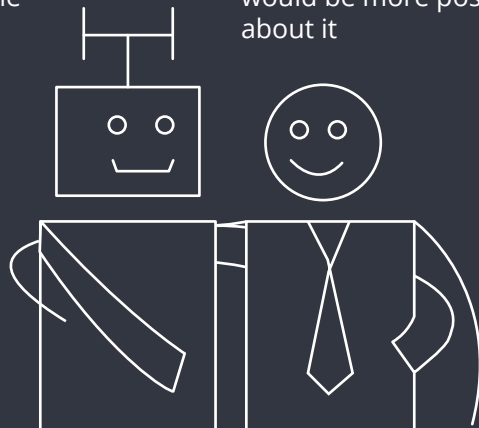 in 2016, up from 7.5 per cent in 2015.[1,2] It accounts for over eight per cent of employment in each of the UK regions, and employs around 3.3 million people across the country.[3] The number of business and related associate professionals has also increased by 49 per cent between 2015 and 2017.[4]

Making your margin – pressures on pricing continue

Deloitte's *Business Services Outlook 2018* identified the continuing pressure on margins as one of the major challenges facing the sector.[5] Based on a selection of 20 major business services companies operating in the UK the average operating profit margin for 2016 was just over two per cent.[6] Two companies in the sample had negative margins while the highest margin was just under ten per cent. This is around half of the average margin (four per cent) for the top 1,000 retailers, a sector that has also struggled with margins and profitability in recent years.[7]

Part of the pressure on margins comes from the lack of pricing power. The Deloitte Chief Purchasing Officer (CPO) 2018 Survey found that among clients purchasing services 61 per cent of CPOs globally indicated more cost savings than last year. Most importantly, cost reduction remained the top strategy for 78 per cent of global procurement leaders, suggesting that clients are likely to continue to seek value in the future.[8]

In addition, new competitors are starting to emerge in many parts of the sector. They are often more agile companies offering lower prices, partially because they are more innovative and technology-led in the way they provide services. For instance, logistics and distribution companies are now competing with firms that employ workers in a more flexible way. Similarly, in facilities management newer companies are using sensors to change their offering from schedule-based services to more data-led, proactive services. This can reduce the total number of service hours and allow more efficient use of staff time. It can also increase customer satisfaction as the services take place before issues occur. For example, staff can be sent to do a cleaning round and restock toilet supplies when the data indicates that these are starting to run low or engineers can carry out maintenance checks before issues arise. Similarly, in waste management, sensors on bins can help optimise routes for bin lorries, reducing the number of vehicles in use and improving customer satisfaction, as the bins are emptied before reaching full capacity.
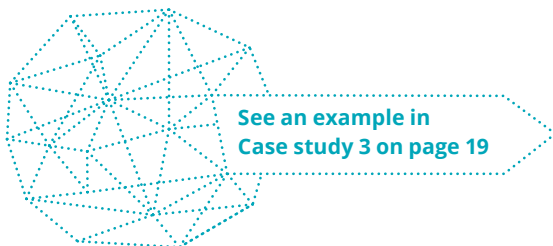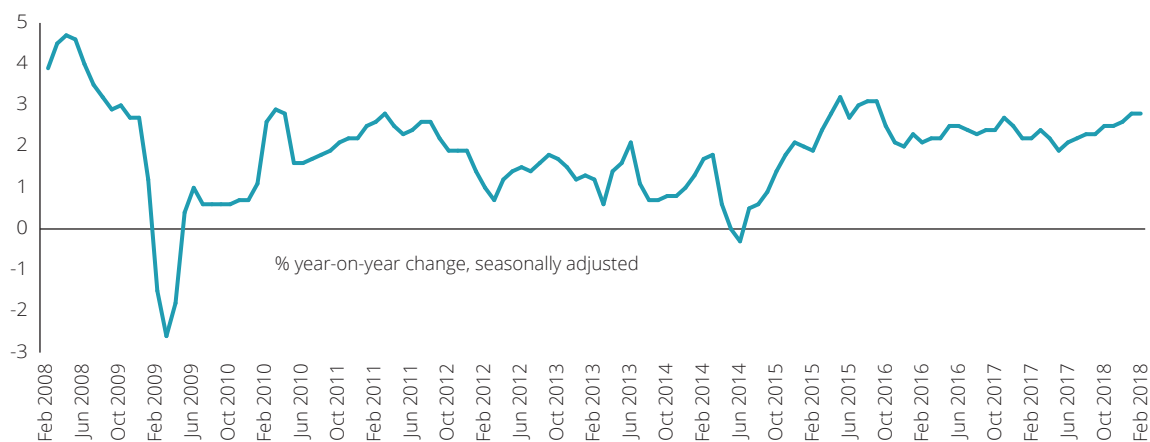
Figure 1. Average weekly earnings including bonuses

Source: Office for National Statistics (ONS), 2018

People costs on the rise

As large employers of manual workers, the recent increases in the National Minimum Wage, National Living Wage and statutory pension contributions have had a substantial impact on labour costs in the sector. According to the Low Pay Commission, 31 per cent of cleaning and maintenance sector jobs and ten per cent of security and enforcement jobs are paid at or below the National Living Wage.[9] This suggests that these sub-sectors have been particularly impacted by the recent rises.

Moreover, the broader data on average earnings suggests that earnings have continued to climb gradually over the last year, indicating that salaries for those earning above the statutory requirements are also rising (See Figure 1), thus increasing operating costs across the board.

The tightening labour market can perhaps explain some of the broader rises in wages. Low levels of unemployment in the UK and reduced immigration, especially from other European countries mean that the labour market has less spare capacity. The unemployment rate stood at 4.3 per cent in the three months to January 2018, the lowest since 1975.[10] This coincided with a 15 per cent reduction in EU net migration, which was largely attributed to fewer EU citizens coming to work in Britain.[11] Given the uncertainty around the arrangements that will be in place for EU and other non-British nationals to work in the UK once it leaves the EU, it is difficult to predict whether the labour supply is likely to continue tightening in the future which could further increase costs in the longer term.

Many jobs, few candidates

Given labour market constraints, business services companies have not been able to operate and grow at their desired rate. Across the UK economy, there were 2.8 job vacancies per 100 filled employee jobs during the period December 2017 to February 2018. Indeed, many of the sub-sectors suffer from significant staffing gaps, with the highest vacancy rates being in accommodation and food services (4.4 vacancies per 100 filled employee jobs).[12] Any growth achieved has come at a higher cost and therefore an even lower margin than before. Many business services companies have had to increase their salaries to attract new talent or even to retain existing staff.

For companies that have not been able to pay more to attract or keep workers, they have had to try to utilise their staff more effectively.[13] This can be challenging as many of the jobs in the sector are manual and thus time-consuming. Adding to the workload of staff, while offering the same pay conditions as before, puts more pressure on existing workers. This in turn could cause them to become disgruntled and leave, reducing capacity to serve clients and increasing labour costs further.

The sector has also longer term challenges in attracting the next generation of employees. Our interviews with business sector companies suggest that as more school-leavers are encouraged to focus on science, technology, engineering and maths at school, some of the more manual, less technology-based roles in business services are seeing a reduced level of interest from the new generation of workers. The roles of cleaners, postal workers or security guards are not seen as attractive career options and hence, recruiting staff for the long term is increasingly difficult.
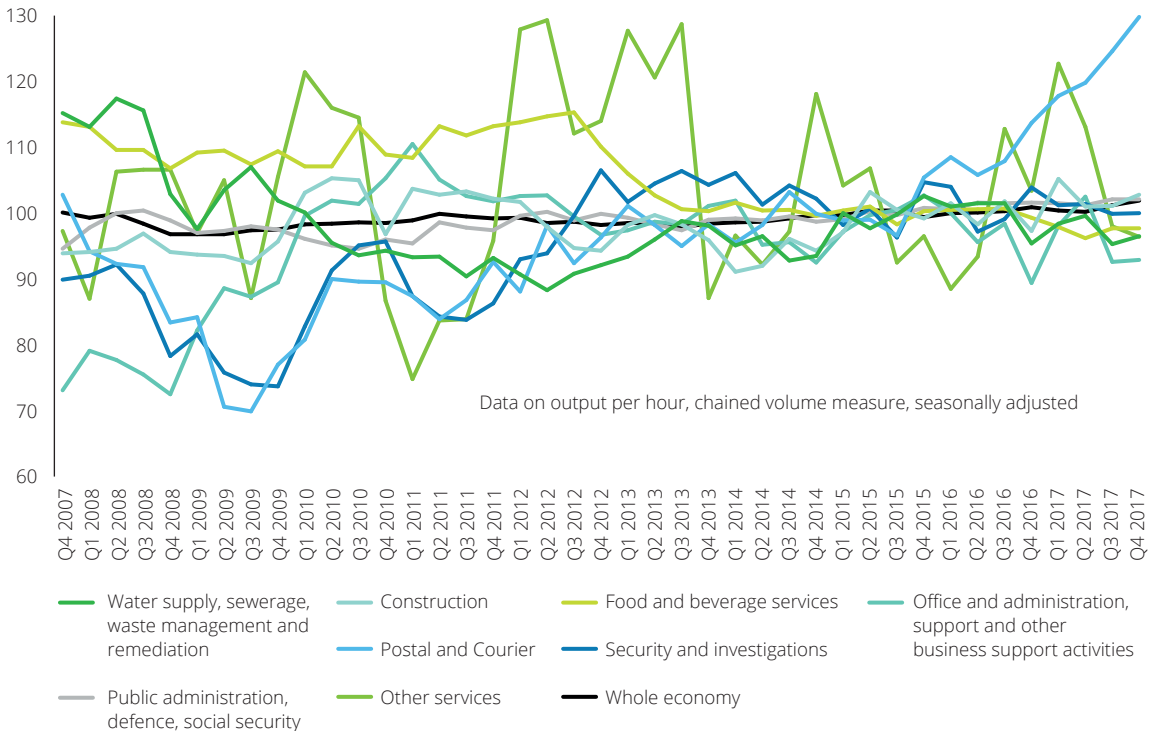
Working hard? – Productivity in business services

While business services companies are often major employers providing lots of jobs for the economy, those jobs are not always very profitable for the companies themselves. Many parts of the services sector have experienced a reduction in productivity growth (see Figure 2). Sectors such as food services, and waste and water services have seen a relative fall in productivity over the last decade as fluctuating demand has left businesses less able to match that with the right level of staffing. However, the distribution and logistics sector has seen significant improvements in productivity as higher levels of competition and the rise of the gig economy have radically changed operating models. This sector has seen new competitors disrupting the mature market by using technology to enable more flexible use of staff and to improve efficiency in service provision. Similarly, increased digitisation is likely to have contributed to productivity improvements in administrative roles.

A study comparing productivity in low paid sectors internationally found that productivity was relatively weak in the UK administrative and business services sectors, which included services such as cleaning, security and call centres. Also, the UK accommodation and food services sectors had relatively low levels of total factor productivity (TFP), or the efficiency or skills through which labour and capital are used. The study found that one factor improving the TFP was a higher share of employees using ICT, suggesting that increasing adoption of technology in jobs in these sub-sectors could help to improve productivity in the future.[14]

Figure 2. Productivity growth in services sectors, Q4 2007 – Q4 2017

Data on output per hour, chained volume measure, seasonally adjusted

Legend:
- Water supply, sewerage, waste management and remediation
- Public administration, defence, social security
- Construction
- Postal and Courier
- Other services
- Food and beverage services
- Security and investigations
- Whole economy
- Office and administration, support and other business support activities

Source: Office for National Statistics (ONS), 2018

A loose connection?

A key reason for weak productivity growth in business services is the limited use of technology and portable devices in routine work, as many processes are still manual or paper-based.

Old devices, old processes

Our survey shows that more than one in ten workers (13 per cent) are not using any digital devices for work purposes. Additionally, 45 per cent of manual workers and 25 per cent of administrative workers say they use little technology in their work. Over half of the manual workers do not use computers (desktops or laptops) and over two-thirds do not use tablets. Smartphones are the most commonly used device for work with 56 per cent of manual workers and 60 per cent of administrative workers using them for work.

Figure 3. Share of workers not using these devices for work
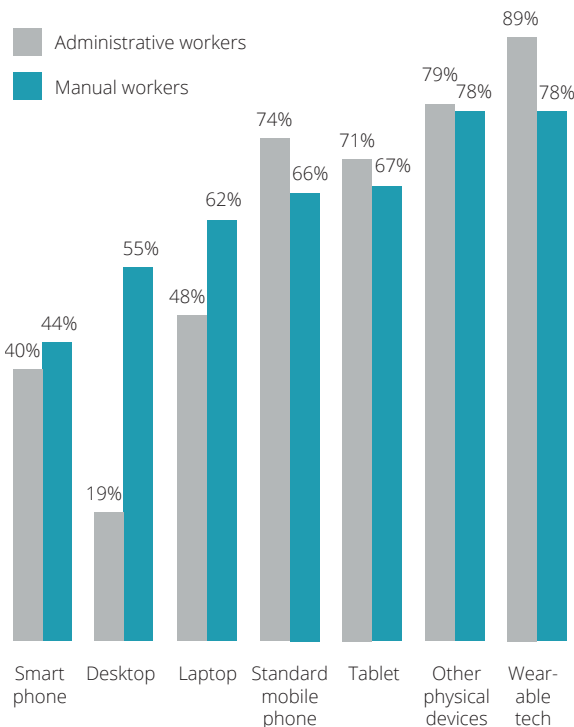
Base is all survey respondents n=640
Source: Deloitte Connected worker survey

Figure 4. Share of workers using employer provided devices for work
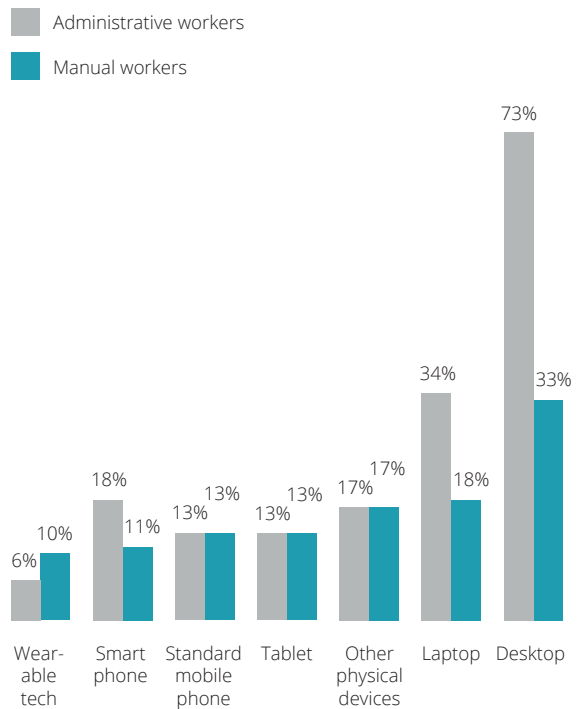
Base is all survey respondents n=640
Source: Deloitte Connected worker survey

Where business services companies are connecting their employees with technology, they tend to offer older devices and mainly for office-based administrative workers. The most commonly provided device is a desktop with a third of manual workers and 73 per cent of administrative workers using these for work. Only one in ten manual workers have access to employer provided mobile devices, such as tablets or smartphones.

Workers are compensating for the lack of employer provided technology with their own devices, with eight in ten already using their personal smartphones for work purposes. Of those who do not currently use their own smartphones for work, over half (52 per cent) would be willing to. The main reason for using their own device is that it makes their jobs easier to do. Thus, workers are already trying to improve their own efficiency by using the technology they have access to.

The majority of administrative tasks are carried out manually, rather than digitally or through technology. For instance, 56 per cent fill out or input information to work related forms, such as job reports, manually. Nearly nine in ten workers (85 per cent) do not communicate with their employer or colleagues using digital technology while nearly two-thirds book their annual leave (65 per cent), order work clothing (65 per cent) or manage stock or supplies (65 per cent) without digital devices. The majority of workers (79 per cent) also assign tasks for others in a manual way while 76 per cent accept work shifts either in person, on paper or by phone.

Figure 5. Ways of completing administrative tasks relevant to their work

Base is those that do the task for work; base sizes vary

Source: Deloitte Connected worker survey

Legend:
- Do it on paper/manually
- Do it in person
- Do it by telephone calls/text messages
- Do it using other technology (using a smart phone, tablet, PDAs, online portal, apps etc)
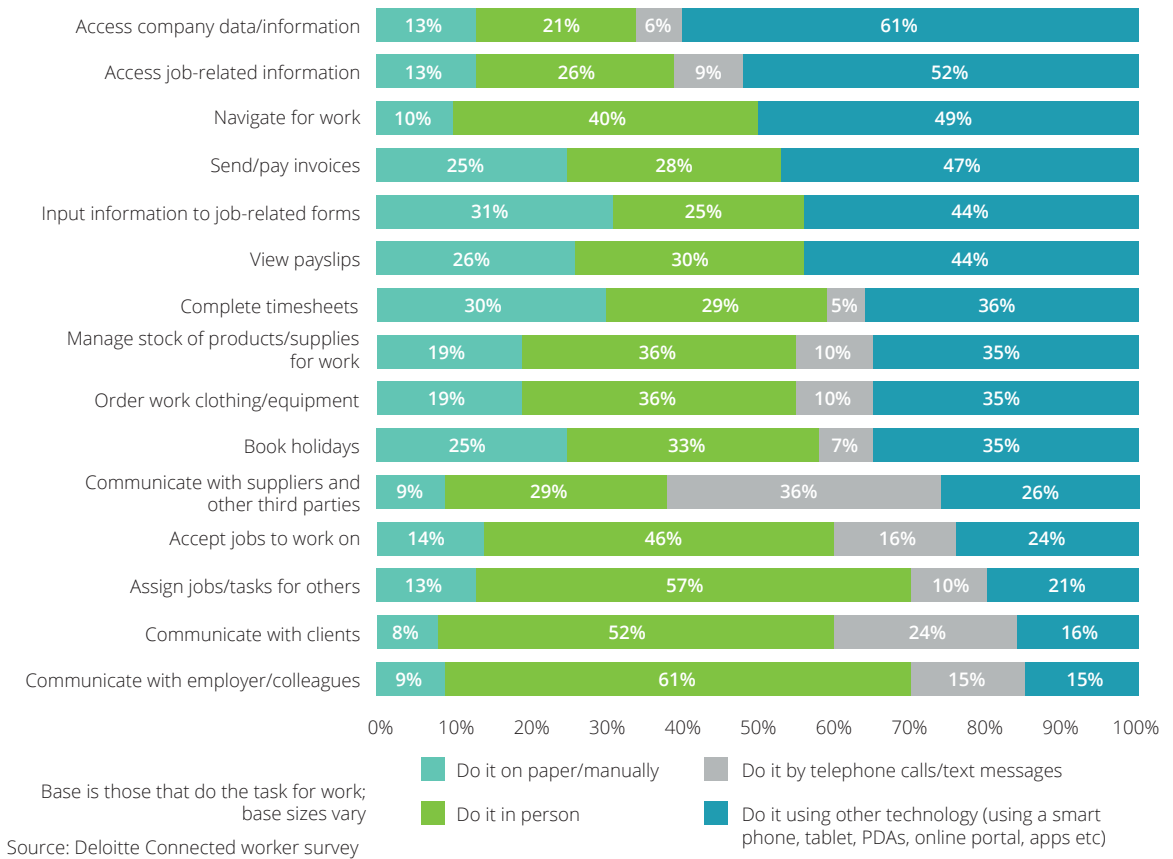
Manual workers are significantly less likely to use technology to complete basic tasks. Only one in ten manual workers (13 per cent) assign tasks for other people using technology, while nearly a third (32 per cent) of administrative workers do. Similarly, over half of administrative workers complete timesheets or manage stock of supplies with technology when only a quarter of manual workers do so.

Figure 6. Completing job-related tasks with technology

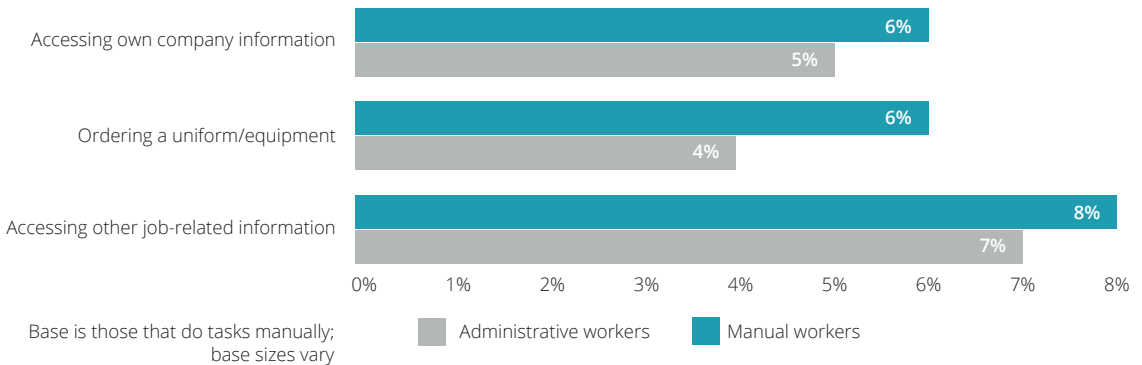| Task	Administrative workers	Manual workers
Access own company data/info	74%	49%
Find locations/navigate for work	66%	41%
Access other job-related information	67%	40%
View pay slips	52%	39%
Send out pay invoices/expenses	63%	33%
Fill out or input information to job/work related forms	61%	33%
Order work clothing or equipment	49%	28%
Book holidays	47%	27%
Complete/submit timesheets	54%	25%
Manage stock of products/supplies for teams/work	51%	25%
Communicate with suppliers/third parties	32%	21%
Accept jobs/shifts to work on	41%	17%
Assign jobs/tasks for others	32%	13%
Communicate with clients/customers	25%	10%
Communicate with employer/colleagues	24%	10%

Base is those that do the task for work; base sizes vary

Source: Deloitte Connected worker survey

Most of the workers find that their current manual way is easy, possibly because they have not experienced any other way. However, there are some examples of common pain points in administrative tasks, such as ordering work clothing, accessing company as well as job-specific information.

Figure 7. Common pain points for workers: Tasks identified as the most difficult

Task	Manual workers	Administrative workers
Accessing own company information	6%	5%
Ordering a uniform/equipment	6%	4%
Accessing other job-related information	8%	7%

Base is those that do tasks manually; base sizes vary

Source: Deloitte Connected worker survey

While workers are using their personal devices for work, they can only use such technology if their employer enables the device to connect or link to processes. The survey results highlight the fact that the majority of processes, which are largely employer controlled, have yet to become digital.

The high price of inefficiency

When asked about efficiency and productivity, almost half of the workers (49 per cent) report there are times when they are not productive. On average workers lose up to ten minutes for each hour worked which translates to nearly three hours a week per worker.

The main reason for productivity losses cited by workers, especially those in administrative roles, is technology issues. This highlights how older devices such as desktops or technology that is otherwise not fit for purpose can reduce productivity.

For manual workers the main reasons for productivity losses relate to the lack of timely access to accurate information. Over a third (36 per cent) highlight getting the wrong information or having to wait for information (35 per cent) among their top three reasons for lost productivity.

While the employees might use their own device for some tasks, productivity is constrained by the lack of apps and software that could connect their devices to the company systems. The use of more digital and communication technologies as well as more sharing of real-time data and information on mobile devices could considerably improve efficiency in the sector.
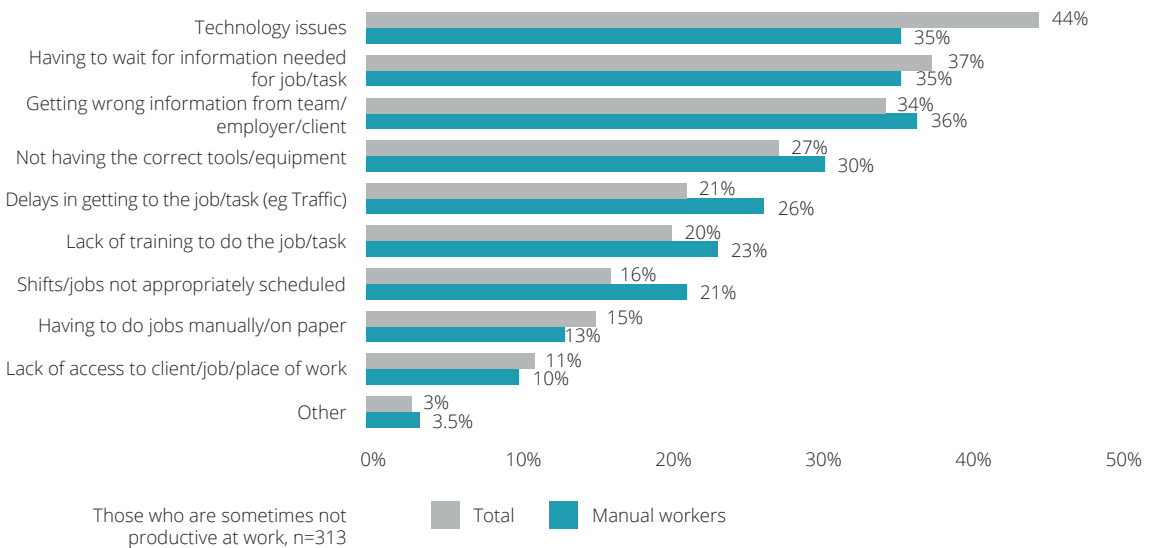
Productivity losses in business services
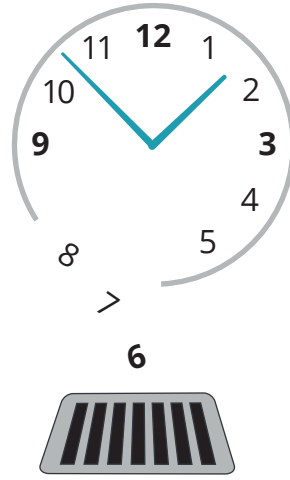
49% of workers say they waste an average of 10 minutes per hour…

…in a median 35 hour working week that is:

2.8 hours per worker per week =

8% **working time lost**

Figure 8. Top ten reasons for not being productive at work

Reason	Total	Manual workers
Technology issues	44%	35%
Having to wait for information needed for job/task	37%	35%
Getting wrong information from team/employer/client	34%	36%
Not having the correct tools/equipment	27%	30%
Delays in getting to the job/task (eg Traffic)	21%	26%
Lack of training to do the job/task	20%	23%
Shifts/jobs not appropriately scheduled	16%	21%
Having to do jobs manually/on paper	15%	13%
Lack of access to client/job/place of work	11%	10%
Other	3%	3.5%

Those who are sometimes not productive at work, n=313

Total   Manual workers

Source: Deloitte Connected worker survey

Is it all about the money?

Exploring different models of investing in technology can help business services companies overcome financial constraints.
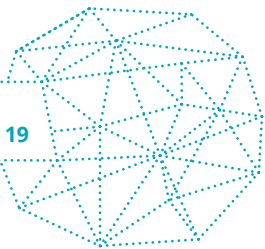
Benefits without big budgets?
Our interviews with business services companies reveal that the most common reason for not investing in technology is the lack of a budget. However, in such a low margin environment companies that do not invest in technology are at the risk of becoming uncompetitive. Further increases in operating costs will squeeze already tight margins even further. There is also a risk that competitors, existing or new, will suddenly invest more and gain a first-mover advantage. More efficient companies will then be able to set new parameters for both pricing as well as quality, given how technology can help them document the value they create. Businesses that continue to work 'the old way' will not be able to meet such standards.

Companies that lack a sizeable technology budget should perhaps focus on simpler or more accessible technologies to improve efficiency, including open-source tools or app-based solutions. It is also important to focus on the projected return on investment and payback periods, so that the benefits of the investment start to flow back to the business as soon as possible.

In addition, companies should consider working with technology vendors to identify different payment models for the technology. Some technology providers have agreed to co-fund the technology development process with clients so that at least part of the fees become contingent on the intended cost savings. Others offer solutions, such as hardware, software and some training, in a service contract. These tend to include a small set-up fee and a recurring (e.g. monthly) payment providing access to the required tools and support for the duration of the contract, raising operating costs but reducing the initial capital investment.

Companies that lack a sizeable technology budget should perhaps focus on simpler or more accessible technologies to improve efficiency, including open-source tools or app-based solutions.

See an example in Case study 3 on page 19

Working in the real world: Practical challenges
Our discussions with operational leaders in business services also reveal that there are a range of issues that make it more challenging to find suitable technology solutions. Internet connectivity is often a major concern. Working in other organisations' premises means that their Wi-Fi networks are often not accessible. In addition, clients' security restrictions could intentionally block mobile internet services which means that cloud or app-based solutions would only work if they are designed to work offline.

Companies are also concerned about staff readiness and their reactions to change. Introducing new technologies can be daunting and stressful. However, our research found that 55 per cent of workers said they would not be nervous about using more technology and 54 per cent felt they had sufficient skills to use more technology, suggesting that they are both willing and able to adopt new tools.

The idea of investing to offer physical devices poses a challenge for many companies, as allocating each employee with their own device can be expensive. Sharing devices can also be challenging when it comes to collecting and dropping off the device. Moreover, employee engagement through the device is then limited to when they are at work, reducing its usefulness for other purposes, such as accepting unplanned shifts or accessing company data or information outside work.

Some business services companies have an individual employed to do various roles, at different points of their working day. For example, an employee could be a receptionist during the day and work as a cleaner after office hours. If specific devices are required for each role, some employees might end up carrying a range of devices.

It is not surprising that the *2018 Deloitte Global Human Capital Trends* survey uncovered some anxiety regarding the effectiveness of new technologies adopted in the workplace.[15] For instance, while 71 per cent of the survey respondents believed that new communication tools improve their personal productivity, 47 per cent were concerned about whether such tools are really improving productivity overall. This suggests that the simple implementation of technology is not necessarily enough to increase productivity, but rather technology, leadership and new working practices must all come together to achieve this goal.

The simple implementation of technology is not necessarily enough to increase productivity, but rather technology, leadership and new working practices must all come together to achieve this goal.
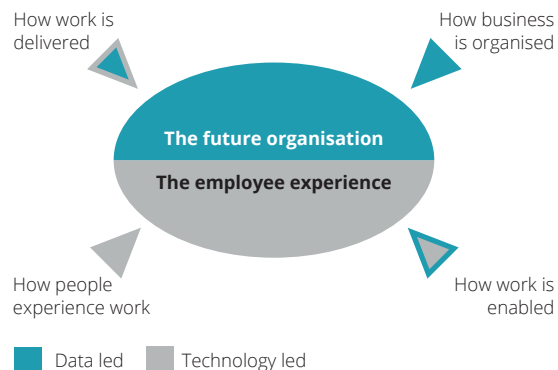
Connecting the worker

The world of work is changing and business services need to evolve their operational models to ensure they remain competitive from a commercial as well as talent perspective.

Future of work

The Deloitte report *The evolution of work* discussed how work and jobs are evolving, with economic, social and technological shifts changing the nature of work and workers.[16] These changes require organisations to start thinking now about how they adapt to these shifts and make the most out of the opportunities they create. Ultimately, they should view the changing nature of work and workers as an opportunity to become a more efficient, profitable company with a highly productive and satisfied workforce.

The future success in business services is linked to the ability to question and adjust current business models, operations and talent management practices to the emerging economic, social and technological shifts. A key success factor will be understanding how to utilise the latest technology to transform operations. Indeed, the workers can already foresee technology benefitting their work, with 48 per cent saying more technology would make their work easier and 47 per cent believe it would make it faster.

Figure 9. The future of work: Where technology and data will impact organisations and their employees

How work is delivered

How business is organised

The future organisation

The employee experience

How people experience work

How work is enabled

■ Data led   ■ Technology led

Source: Deloitte

Let the data lead the way: Insight-led decision-making

Many business leaders find it difficult to understand how to best start the process of reviewing and planning for more agile operating models. The first stage is about enhancing the company's understanding of the problems that weigh down current performance. Data analytics is a powerful tool at this stage: It can provide an objective view of the underlying causes of inefficiencies and, consequently, guide business leaders on what should be changed.

See an example in Case study 2 on page 18

Such a tool is vital to creating more robust and considered long-term strategies. In the *2018 Deloitte Global Human Capital Trends* survey, 84 per cent of respondents viewed people analytics as important or very important, making it the second-most critical trend.[17]

Insights from analytics are equally crucial in empowering workers in their day-to-day jobs. It can help them better understand the context in which they operate, and make more evidence-based decisions.

The sector can also use the insight gained from analytics to augment services and client relationships. For instance, a facilities management company could provide clients with information on how their organisations are performing relative to others, which could in turn enable clients to improve their operations.

Figure 10. Rationale for investing in technology

More technology in business services roles

Improve worker productivity and experience

Collecting operational data and using analytics for insight

Better decisions about changing inefficient processes and indentifying areas for improvement

Efficiency gains and enhanced client relationships cover the cost of technology

Source: Deloitte

Not having the right data to use and analyse can be a problem, but one that can be solved through a range of techniques and methods. The identification of data gaps can also be regarded as a chance to explore how they can be filled, and could guide some future technology investment choices.

Many employees are open to employers collecting data on their activities. Half of business services workers surveyed said they would be comfortable with their employer collecting information about them and how they do their work; only a quarter (24 per cent) said they would not be. They would be most comfortable with collection of data about: workplace equipment (69 per cent), the use of work-related applications and computer programs (53 per cent) and their own productivity (62 per cent). Only 29 per cent would feel comfortable with employers hearing their conversations with colleagues, or collecting their health-related data (33 per cent).

See an example in Case study 4 on page 20

Accelerating productivity with the right technology choices

A variety of new technologies – from wearables to drones and robotics – can help collect useful data and practically improve business services workers' efficiency. Deloitte's previous report on automation in business services showed how robotic process automation, cognitive automation and other technologies have great potential to improve productivity, enhancing services at a lower cost. Our research findings suggest that 25 to 31 per cent of the 3.3 million jobs in business services are at high risk of automation in the next 10 to 20 years.[18] While reducing the need for certain roles, automation will also generate new, more engaging roles that will use the social and problem-solving skills only humans can have.

Our recent research with business services firms shows that although robotic and cognitive automation are seen as important for the future, many firms are actually planning to move quickly beyond that; they identified artificial intelligence (AI) as the technology with the most significant impact on their business.[19] Respondents also indicated that, by 2020, their investments will focus largely on AI and the Internet of Things.

Most of the businesses contributing to our research expect AI to eventually cause a reduction of their overall workforce, suggesting that the resulting efficiency gains are a key criterion in their investment deliberations. Three out of ten workers said they would feel comfortable working alongside robots and AI. Yet 63 per cent of workers say they are more likely to be positive about new technologies if they know how it helps them in their work. Therefore any integration of such technology has to be managed carefully.

Other technologies identified as influential by some companies include drones that improve efficiency in distribution and logistics, including warehouse operations. Wearable technologies are also seen to offer myriad opportunities in sectors such as construction, whose workforce is mobile: Collecting more data about the workforce would

help improve planning and how to alleviate health and safety issues.

Building a better connection with staff

Technology is not only a tool for improving efficiency. It can and should be used to engage better with staff. Our business services worker survey suggested that employees are eager to use technology to obtain work-related information and communicate more with their employers: Nearly half (48 per cent) said this would make them feel more positive about their work. The same proportion said they wanted to access more work or company information through technology. Although talking to employers in person remains the preferred method of contact (67 per cent), nearly four in ten employees (37 per cent) would

also like to communicate with their employer via technology.

Technology can be used to enhance the employer/employee relationship so that at critical points in the employee's career at the company he or she can choose how to access relevant information. Providing workers with more than one method of interaction can make the 'moments that matter' more positive and memorable experiences.

To illustrate this, the following case study describes a fictional character, Alexandro, engaging with the next-generation digital workplace to accomplish his goals. He is a 58-year-old baby boomer considering early retirement – a critical 'moment that matters'.[20]

Case study 1
To retire or not to retire

Alexandro has been considering early retirement for months, but has been intimidated by the many decisions he would have to make. As the digital workplace chatbot explains to him that it can listen, understand natural language and talk back, Alexandro relaxes. Although he much prefers dealing with his old friend, the office human resources generalist, he understands that times have changed.

As Alexandro answers the chatbot's questions, he is reassured to discover that the training, research findings and assistance available through the system are quite extensive and tailored for his situation. Alexandro assumes he would be mostly on his own in making the final decision, so he is pleasantly surprised when the chatbot offers more sophisticated support: In Solution Adviser mode, the

chatbot articulates back to him his desired retirement outcomes; summarises key health, financial and retirement location variables; and begins to present alternative scenarios.

After a structured conversation with the chatbot, Alexandro receives a customised retirement plan. He discusses it with the chatbot to clarify the details, then verbally authorises it to complete the retirement process.

At several points in Alexandro's conversation with the chatbot, the questions touch on how he is feeling about the process, how he intends to keep busy in retirement and the role his spouse is playing in the decision. Alexandro jokes that his wife has practically insisted he retire, and the chatbot asks whether he wants to speak to a retirement specialist about his decision.

Alexandro is impressed that the system managed to sense some of his ambivalence about his life after work. The chatbot not only projected a certain degree of empathy with his situation but also offered him the opportunity to speak with a specialist. Although this chatbot is obviously not truly able to empathise like his human resources friend would, the retirement information it provides is helpful, and the option of speaking to another human about his feelings is available.

Showcasing the impact

Innovative solutions have nurtured productivity and efficiency, proving technology investments to be worthwhile.

Companies that have used technology to reduce effort, alleviate pain points for workers and analyse data to make better operational decisions have reaped commercial and staff-retention benefits. The following three case studies show how various tools and approaches have given users a wealth of benefits, including quantifiable gains in efficiency, cost savings and improved engagement with employees.

Case study 2

Pinpointing the problem: How data analytics helps manage labour productivity in catering and food services

The business challenge

Labour is the single biggest cost for the catering sector. Given wage inflation and increasing margin pressures, as well as problems recruiting appropriately skilled workers, catering businesses are increasingly seeking better ways to manage people and costs.

Due to long-term under-investment, companies often do not have effective labour management systems that can match demand with supply. In many cases, labour schedules have remained static for years, with the same number of staff members working at same time every day, irrespective of how many are needed. There is also an imbalance of experience in workers doing the same job in different locations, meaning rates of pay are not aligned.

Accounting for a large proportion of the cost base, sub-optimal labour performance often correlates with low or negative operating margins. Labour performance across similar sites can vary notably and one reason for this is that managers often lack sufficient, trusted information to help them make informed decisions to improve labour performance at their site.

How can a catering company start thinking about options to reduce costs but still remain competitive in the market for clients and talent?

The solution

Deloitte has developed a labour productivity solution to help catering companies better optimise their workforce management approaches. The aim is an improved labour-to-revenue ratio for each site, achieved through clearly prescribed and practical actions.

The solution includes analysing the manager and supervisor headcounts, assessing the mix and capabilities of part-time, full-time and salaried employees, and aligning staffing schedules with demand. The algorithms in the solution automate the identification of saving opportunities. They also provide rich, quick insights into human resources, transactions and financial data.

The benefits

This data-led approach to labour productivity has provided labour savings of five to six per cent across the £1 billion of labour expenditure that has so far been examined; this has generated over £50 million of savings in labour costs.

The analytics tool includes an easy-to-use online portal to input scheduling and labour data quickly and accurately. This results in insights regarding scheduling, blends of skills and roles, management ratios and pay levels.

Catering companies that use the tool can quickly improve efficiency by implementing more effective labour models.

Case study 3

Keeping it clean – How Tork EasyCube has improved productivity in cleaning

Essity is a global company that produces and sells hygiene and health products and solutions. Its Tork brand offers hygiene solutions for facilities management companies, as well as other corporate clients, in settings that range from washrooms to overall facility cleaning.

The business challenge

Facility cleanliness, for washrooms in particular, is a key factor of visitor satisfaction for many consumer-facing companies. If businesses such as airports or sports facilities fail in this area, it can lead to disappointing customer experiences, potentially negative reviews and, ultimately, loss of revenue. Moreover, clean facilities and toilets at corporate facilities play a role in staff satisfaction.

Clients with in-house cleaning teams have struggled to find a balance between providing a high-quality service without 'over-cleaning'. Their cleaning teams also often have substantial staff turnover and short-term absenteeism, creating additional operational hurdles and affecting morale.

These are also major challenges for cleaning services providers. However, given these companies' tight margins, their teams' efficiency is crucial to profitability and competitiveness. *"Some of the data suggests that 88 per cent of dispenser control [checks] are unnecessary"*, says Anna Königson Koopmans, the European Marketing Manager for Tork Solutions. *"When 80 per cent of your costs come from labour, optimising that is the biggest area of opportunity for improving the margin"*.

Additionally, in a very competitive market, cleaning companies are anxious to attain objective evidence and data that will demonstrate the importance of their work to their clients.

The solution

To address their clients' problems, Essity developed Tork EasyCube, which comprises:

• paper and soap dispensers with sensors and counters that measure visitor numbers in real time

• a cloud-based application for tablets or smartphones that cleaners attach to their trolleys, providing real-time data on what is needed, where and when

• analytics software for managers that provides access to a suite of data, enabling them to control, plan and follow up when needed, reducing required management time

Tork EasyCube enables:

• **cleaners** to more intelligently manage the stock of their trolleys and then tend to the locations that need it, providing the right items before problems or complaints arise. They can also track tasks and tick them off on their device, receiving evidence of progress and facilitating handovers and discussions with managers

• **managers** to have better visibility of activity, so they can control how their team operates and use staff more effectively. The tool also enables them to directly communicate to their staff by sending messages to their devices, reducing disruption and management time.

Companies pay an upfront training and installation fee, then a monthly service charge.

Continued...

"When 80 per cent of your costs come from labour, optimising that is the biggest area of opportunity for improving the margin"

The benefits
When developing Tork EasyCube Essity ran a study, including observations and interviews, before and after a client adopted the tool. The results were the basis for the Tork EasyCube calculator on Essity's website, which allows prospective clients to estimate the savings they could get from using it. The calculator has been updated to use broader data collected through the software.

From a quality perspective, clients with Tork EasyCube have seen:[21]

- 76 per cent reduction in the time that dispensers are empty

- 30 per cent higher visitor satisfaction in washroom cleanliness.

The efficiency of staff has also been improved, with:

- 77 per cent reduction in checking dispensers

- 62 per cent increase in actual cleaning activities

- 20 per cent reduction in overall cleaning hours required.

In addition, staff engagement has improved; employees seem happier and less stressed because they know *"what is needed, and that they now do what matters".*[22]

The gamification (ticking tasks off their list) also makes their jobs more fun and engaging. Finally, managers feel more confident and report that they feel more in control of what is happening, despite spending less time managing operations. [23]

Case study 4
Imagine this: Augmenting productivity in construction

The business challenge
In a construction project a major hurdle is effective coordination of various tasks and workers. Workers on construction sites might refer to a range of documents, both digital and paper, and two-dimensional plans that do not represent accurately the space they see. Nor do these documents allow them to imagine how their tasks link to the other parts of a project's design. Thus, it is often difficult for a worker to foresee or pre-empt problems. Often issues are only spotted by the person working on the next task, leading to delays as issues are fixed and causing many inefficiencies in the process.

Over the past few years various technologies have been developed for construction workers to help solve issues in productivity and efficiency. Given the mobile nature of construction workers, wearable technologies have been an area of interest.

The solutions
US-based company DAQRI has developed an augmented reality (AR) helmet to enable workers at construction sites to see the real world overlaid with computer imagery. Work instructions are shown on the helmet's visor, so the worker can see the tasks that need to be done in the context of the workspace. The helmet can also

provide them with information about the inventory of materials available and a host of other data.

The DAQRI Smart Helmet combines cameras and sensors to capture and record real-time information about the wearer's surroundings, from valve readings to thermal data. It can also show the wearer stored information, like safety guidelines and instructions.

The device can be integrated with building information-modelling software, allowing users to see the insides of structural elements, such as the interior of a pipe.

In practice, this means the worker wearing the helmet can see an AR view of the workspace and identify how other structures and plans will be effected in the part they are working on (such as where the cabling or air conditioning will be). The visor can then display step-by-step instructions for installations or other tasks.

The manager can communicate with the worker through speakers and a microphone in the helmet, and the camera allows the manager to see what is shown through the visor. Thus they can help identify problems or solutions without physically accompanying the worker. Additionally, the employer can collect rich data from the site to understand progress and issues, and plan more effectively for future stages of the project.[24]

The benefits
From the employee's perspective, the DAQRI Smart Helmet empowers them to improve their decision-making in the context of their work. AR visualisation provides them with data to make better decisions and connect the importance of their current task to the overall job. This enables them to work more effectively, avoid mistakes, develop their skills and learn quickly.

For the employer, the helmet helps enhance productivity and timeliness of tasks, as fewer mistakes occur and less reworking is needed. It also reduces training time. Finally, it offers huge potential for data mining, compliance optimisation and maintenance of construction records. *"The Smart Helmet knows how you*

move through a space, and it can map the environment and start to create a 3D reconstruction of a facility", according to the company. *"When you have multiple people wearing the Smart Helmets, they share that information and you build an entire model of that facility with that combined data".* [25]

The common success factor for these case studies is the connection the technology creates between workers and data. This enables them to be more productive, make better decisions and see their work in the wider context. Linking their role, and the importance of their work, to achieve their clients' service goals fosters a sense of achievement and motivates them to work effectively.

From theory to reality: The to-do list

So how can business services companies put the theory into practice and start future-proofing their operations? Here are our thoughts on the things to do.

Improve decision-making with data

- Identify pain points by talking to employees across the organisation

- Map out the data and information needed to gain a thorough understanding of underlying issues and key reasons for inefficiencies

- Examine what relevant data is available to analyse productivity problems and identify what data should be collected by new technologies

- Set key performance indicators the company would like to improve on.

Connect the workforce with technology

- Identify technologies that can address pain points and discuss with employees how they would like to use technology to improve their efficiency at work

- Consider the lifetime cost of the technology while determining the expected return and payback periods, to understand how quickly the investment can be recovered

- Pilot technologies – initially at a small scale, in a select part of the organisation or on a small group of workers – and measure their performance against the intended indicators to see if the tools address problems.

Collect evidence and scale up

- Collect feedback from the employees involved in the piloting and use the new data to understand the performance of the technology

- If a technology is successful in addressing efficiency problems, scale up the investment and implement it at a larger scale, to see the impact on overall business performance

- Communicate to staff the intended benefits of technologies and offer them training to ensure the investment brings maximum return

- Continuously review and consider new, interesting tools as they emerge.

Contacts

Leadership team

James Yearsley
Lead partner, Services
+44 (0)20 7007 8131
jyearsley@deloitte.co.uk

Richard Coombes
Partner, Human Capital
Connected Employee Lead
+44 (0)20 7007 5074
richardcoombes@deloitte.co.uk

Howard Doberman
Partner, Labour productivity
+44 (0)20 7007 8024
hdoberman@deloitte.co.uk

Oliver Hemming
Partner, Monitor Deloitte
+44 (0)20 7007 9140
ohemming@deloitte.co.uk

Phil Neal
Lead partner, Digital
Transformation
+44 (0)20 7007 4065
pneal@deloitte.co.uk

Author

Aino Tan
Manager, Insight
+44 (0)20 7007 4406
aintan@deloitte.co.uk

Contributors

We would like to thank all the companies taking part in our research for their contribution, including the BSA and their participating members.

Additional thanks to our Deloitte specialists, including Anna Beyer, Markus Busuttil, Georgina Dowling, Richard Evans, Richard Horton, Valerie Molin, Daniel Randolph and Neera Ridler-Mayor.

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