Pathfindr

The state of digital transformation in manufacturing 2022

Executive summary

Most businesses use manual processes to get things done: The number-one method that businesses use to track the location, environment and activity is manually using spreadsheets. Many also track these manually on paper or using an electronic device.

This is leading to a series of operational challenges: 29% of businesses say they often misplace items and lose velocity of work in progress, while 27% often have to service tools based on a schedule, rather than use or need.

Yet, overall, businesses are confident about their digital transformation efforts: Roughly a third of businesses (34%) in the manufacturing industry believe they're ahead of their competitors - while more than half (53%) say they're at least in line with them. This suggests a clear disconnect between where businesses think they are versus where they actually are.

A disappointing number of businesses have adopted key manufacturing technologies: A low 18% of businesses have implemented condition-based monitoring, for example. Whilst only 13% have invested in asset tracking.

But businesses expect to have these key technologies in place within the next few years: Whilst adoption rates for these technologies are currently relatively low, these are expected to rise over time. For example, a huge 76% of all businesses plan to have implemented asset tracking by 2026, while 72% plan to have adopted condition-based monitoring.

Too many businesses are still using spreadsheets and manual processes

Although many businesses rate their digital transformation efforts as advanced, our research finds otherwise.

We asked businesses how they monitor the location, environment, activity and performance of tools, machinery, materials, work in progress, components, vehicles, and infrastructure.

The results paint a surprising picture across the board: The number-one method that businesses use to track the location, environment and activity is **manually using spreadsheets**.

In fact, most of businesses still rely on time-consuming, costly and inefficient processes (such as **manually on devices and paper**) to get things done, as opposed to automation.

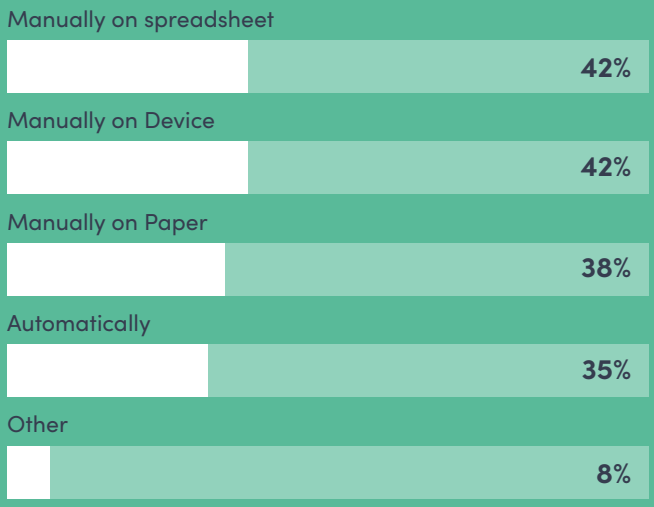
> "Surprisingly, only 35% of businesses use automated processes to track the location of their assets. Yet, automating this process brings a plethora of benefits."

This points to a deep disconnect between how advanced businesses see their efforts versus where they *actually* are.

Here's the full breakdown:

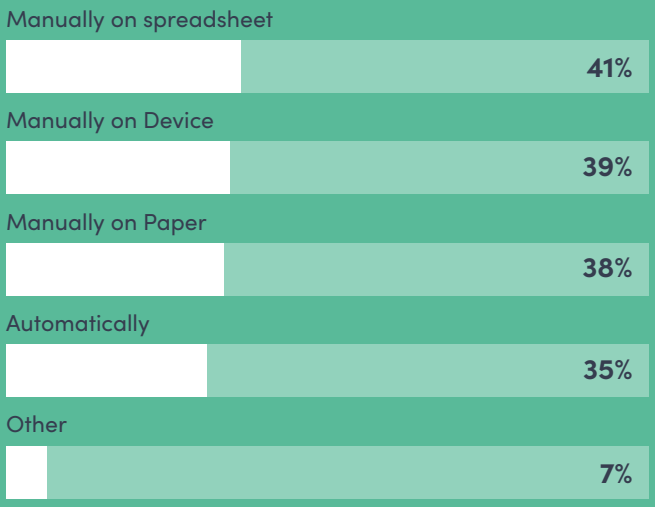
Locations*

Businesses say that they track the location of their assets:



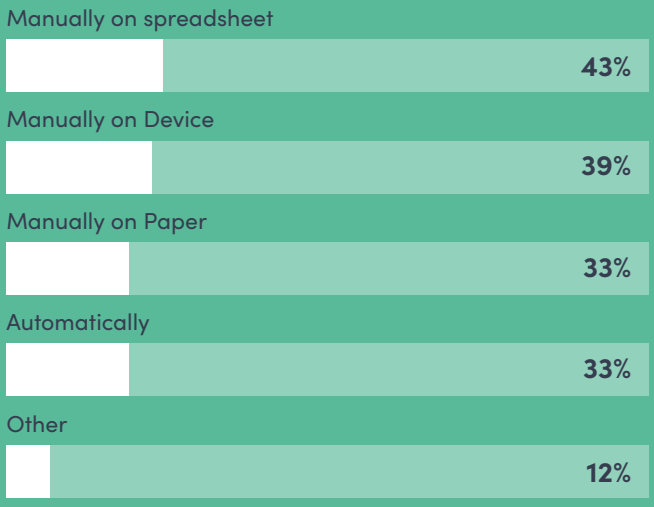
Environment

Businesses say that they track their environments:



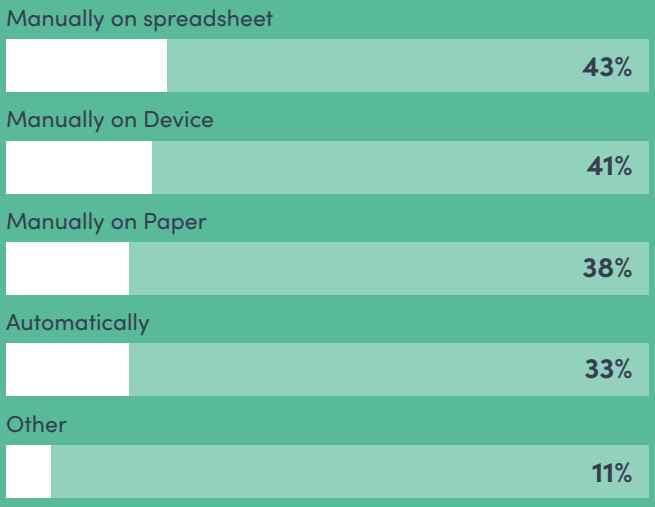
Activity

Businesses say that they track operational activity:



Performance

Businesses say that they assess performance:



Manual processes lead to significant operational challenges

A surprisingly low number of businesses have adopted cornerstone manufacturing technologies.

If we combine that with the fact that most businesses are still using manual approaches to data collection and sharing, it's hardly surprising that so many are facing such huge operational challenges.

For example, half of all organisations (50%) say that locating tools and components take **up 2-3 hours** of their working time in an average week.

This might not sound like much, but it adds up to more than **a full working day** every month and can incur costs associated with production downtime, wasted labour, inventory depletion, and more.

As for the others, just under a quarter (24%) say that this takes them an hour less than that each week (1-2 hours) while an equal percentage say this takes them an hour more (3-4 hours).

Alarmingly, no respondents said that this takes them less than an hour.

> "...almost three in ten (29%) businesses are regularly misplacing items on premises or during worldwide travel."

Almost a third of all businesses often misplace items

So, what are the key operational challenges facing organisations – and what's causing them?

Misplacing items
Coming in at joint-first place, almost three in ten (29%) businesses are *regularly* misplacing items on premises or during worldwide travel.

This is down to:

- Lack of data to monitor **43%**
- Lack of real-time data to monitor **39%**
- Using out-of-date tools **32%**
- Having poor processes in place **28%**
- Other **10%**

Work in progress velocity not being maintained
Also in joint-first place is that the velocity of work in progress is not maintained due to lack of visibility and control – with 29% of organisations experiencing this often.

This is down to:

- Lack of data to monitor **43%**
- Lack of real-time data to monitor **39%**
- Using out-of-date tools **36%**
- Having poor processes in place **33%**
- Other **10%**

Tools and equipment being serviced based on a schedule, rather than use or need
Thirdly, 27% of businesses often find that tools and equipment are serviced on a schedule – rather than based on use or need.

This is down to:

- Using out-of-date tools **39%**
- Lack of data to monitor **38%**
- Lack of real-time data to monitor **38%**
- Having poor processes in place **32%**
- Other **5%**

Lack of data/lack of visibility of data as a key challenge

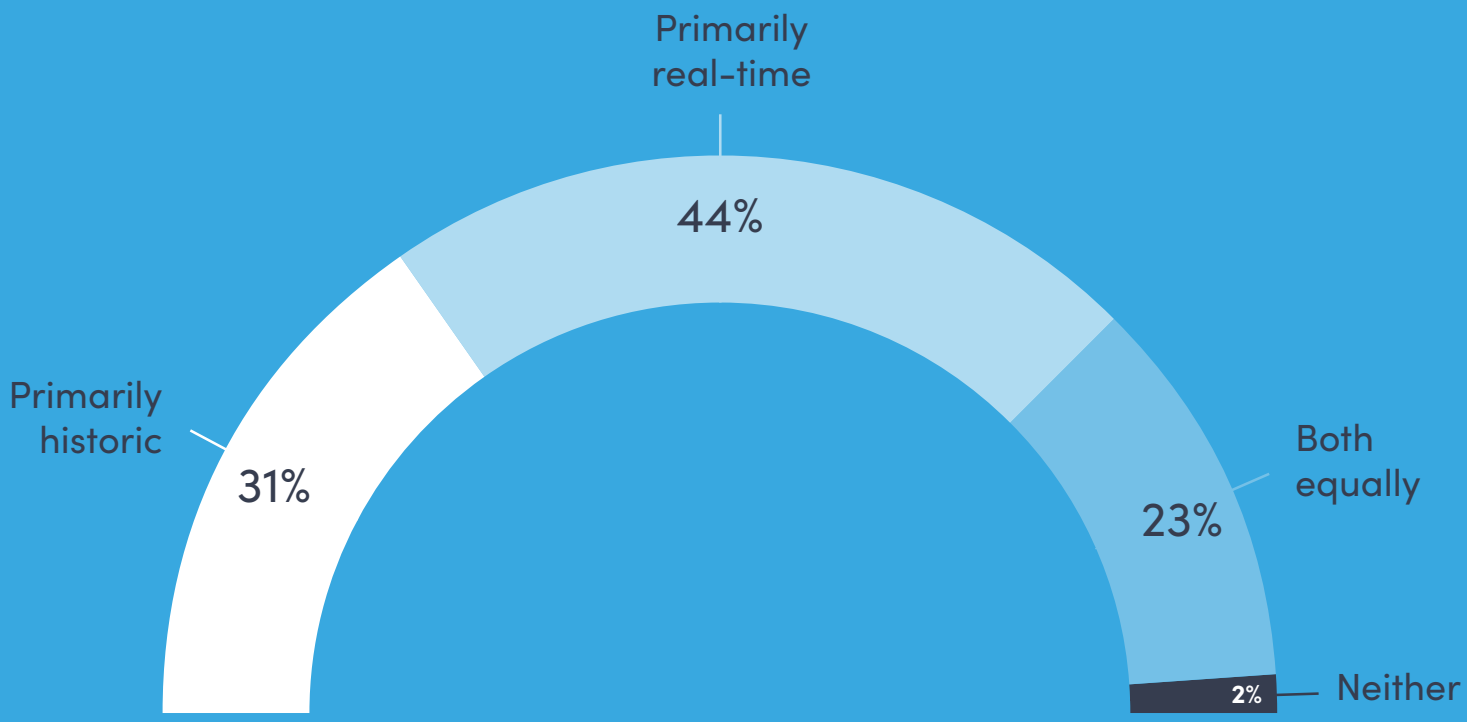
Evidently, the lack of data/real-time data to monitor is a prevalent problem for businesses.

Yet, the majority (44%) of businesses say that they primarily prefer to look at data in real-time. While only 31% prefer to look at historic data, and 23% say they look at both equally.

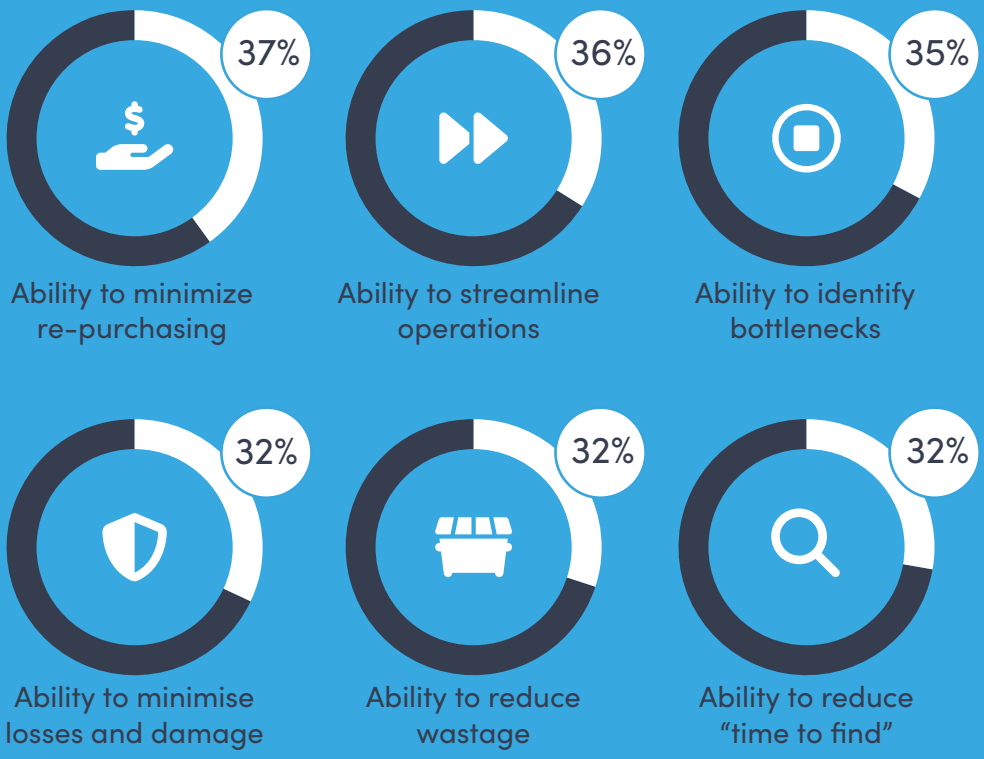
That means that, in total, more than two-thirds (67%) of respondents regularly deal with real-time data as part of their roles.

Note: "Real-time" doesn't necessarily have to mean that data is live to the millisecond - it can also include data that's pulled at regular intervals to provide timely insights and improve energy consumption.

Q8: Do you primarily use historic data or real-time data in your organisation i.e., to improve your manufacturing and logistic processes?



Q12: What does the data you collect in your organisation enable you to do, if anything?



But lack of available real-time data is causing serious challenges.

For example, 32% of businesses say that they use data to help reduce their "time to find" - yet 29% of businesses are misplacing items *often* because they lack real-time data to monitor.

An additional 36% say that they use data to help streamline operations, while 35% use it to identify bottlenecks - yet 29% of businesses *often* lose work-in-progress velocity as a result of a lack of real-time data to monitor.

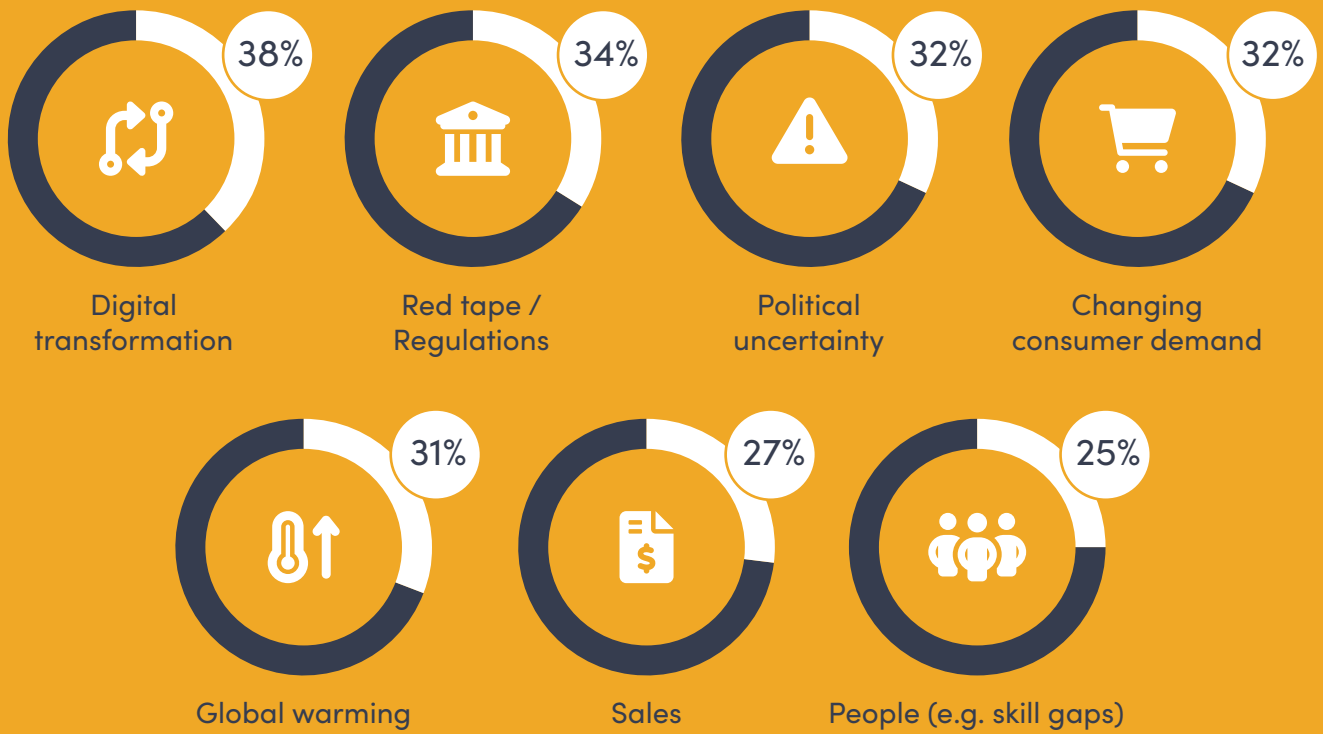
Digital transformation is the number-one challenge for manufacturing in 2022

Digital transformation is the number-one challenge that businesses will face over the next five years.

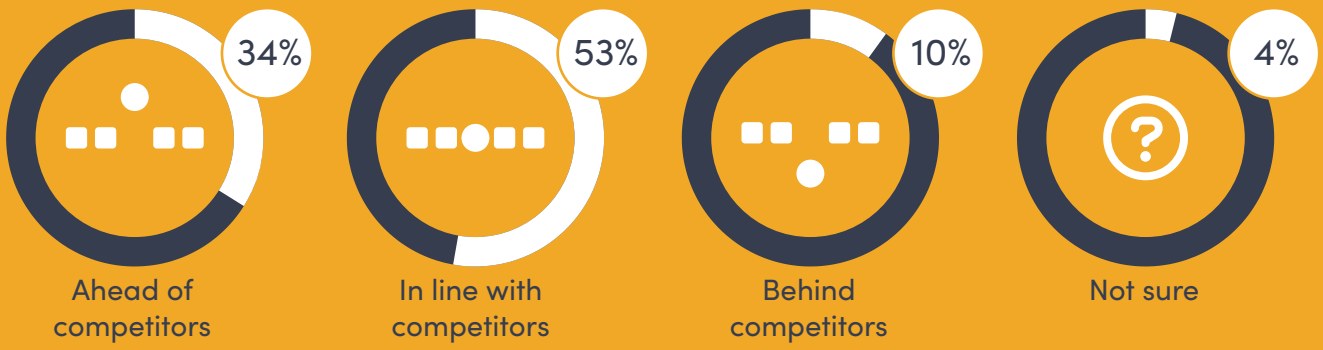
Almost four in ten (38%) businesses cite digital transformation as one of the top challenges they'll face within the next five years.

This is closely followed by regulations (34%), political uncertainty (32%), changing consumer demand (32%), global warming (31%), sales (27%), and people (25%).

Q1: What do you anticipate the biggest challenges will be to your business over the next five years, if anything?



Q5: How would you rate your digital transformation efforts?



Yet, businesses are confident in their digital transformation progress

Roughly a third of all businesses (34%) say that they're *ahead* of their competitors in their digital transformation efforts - while more than half (53%) believe they're at least *in line* with them. Only a tiny fraction (10%) think that they lag behind their peers.

But interestingly, most businesses expect to be *ahead* of their competitors within a relatively short timeframe. And many plan to do this by implementing the essential manufacturing technologies that they lack - including inner-platform integration, self-optimising systems, and asset tracking.

Most businesses (51%) hope to be ahead of their peers within the next 1-2 years, while 37% expect this to happen within the next 7-12 months. Only 11% expect this to take as long as 3-4 years. While a tiny fraction (1%) thinks this is possible within the next six months.

Q7: What best describes where you are in your digital transformation journey?

More than half of businesses have successfully implemented projects

Despite more than a third of manufacturing businesses saying that digital transformation is a key challenge, just over half (51%) have seen transformation projects successfully implemented - with 26% of those seeing *many* successful projects and 25% seeing a few.

We should note that these are likely to be smaller more isolated projects rather than large-scale transformation projects.

But, for many businesses, reaping the benefits of digital transformation is a waiting game.

A fifth of all businesses (20%) anticipate that, although they're yet to see success, it will happen *soon*. While 16% believe this will happen *eventually*. So, businesses remain optimistic and confident that their digital transformation efforts ultimately will pay off.

Only 12% of businesses have either had no success at all or not started their digital transformation journey - which suggests that digital transformation is likely to be a positive and beneficial experience for businesses.

It seems that businesses should approach digital transformation through smaller, more agile baby steps - rather than bringing in a consultancy to perform a large-scale transformation. This is likely to return optimal results.

Large businesses find digital transformation easier than smaller ones

Overall, 38% of businesses say that digital transformation is a key challenge. This number rises to 42% when we look exclusively at businesses with 250-500 employees and drops to 33% when we look at those with more than 500 employees.

In the previous section, we saw that insufficient budget is the third most common barrier to growth for businesses of all sizes. So, it's easy to assume that smaller businesses might have smaller budgets than larger ones and would struggle more with digital transformation.

But our evidence suggests otherwise. Insufficient budget is a key barrier to growth for 38% of larger businesses, while for smaller businesses, that sits at 30%.

Instead, our research finds that the key challenges for smaller businesses include lack of expertise (32%) and employee resistance to change (36%).

While, for larger businesses, lack of expertise is a challenge for only 25% and resistance to change impacts a small 27%.

Businesses that consider digital transformation a key challenge

Adoption of key manufacturing technologies is at a significantly low level

Despite overall confidence in digital transformation efforts, adoption of key manufacturing technologies remains at a significantly low percentage.

The majority of the following technologies have been implemented by fewer than one in five organisations.

- Remote services **21%**
- Inter-platform integration **20%**
- Demand forecasting **19%**
- Condition-based monitoring **18%**
- IT/OT integration **18%**
- Predictive maintenance **18%**
- Self-optimising systems **18%**
- Workflow integration **18%**
- IoT digital marketplace **18%**
- Energy management **17%**
- Digital products **17%**
- Asset health **16%**
- Process modelling **16%**
- Process optimisation **16%**
- Performance monitoring **15%**
- Inventory management **14%**
- Servisation **14%**
- Asset tracking **13%**
- Geofencing **12%**

Evidently, there's a disconnect here between the way that businesses *perceive* how far along they are on their digital transformation journey (with a third of all businesses believing they're ahead of their competitors) and the reality of where they are (exemplified above).

The need to explain the transition to clients is the number-one barrier to implementation

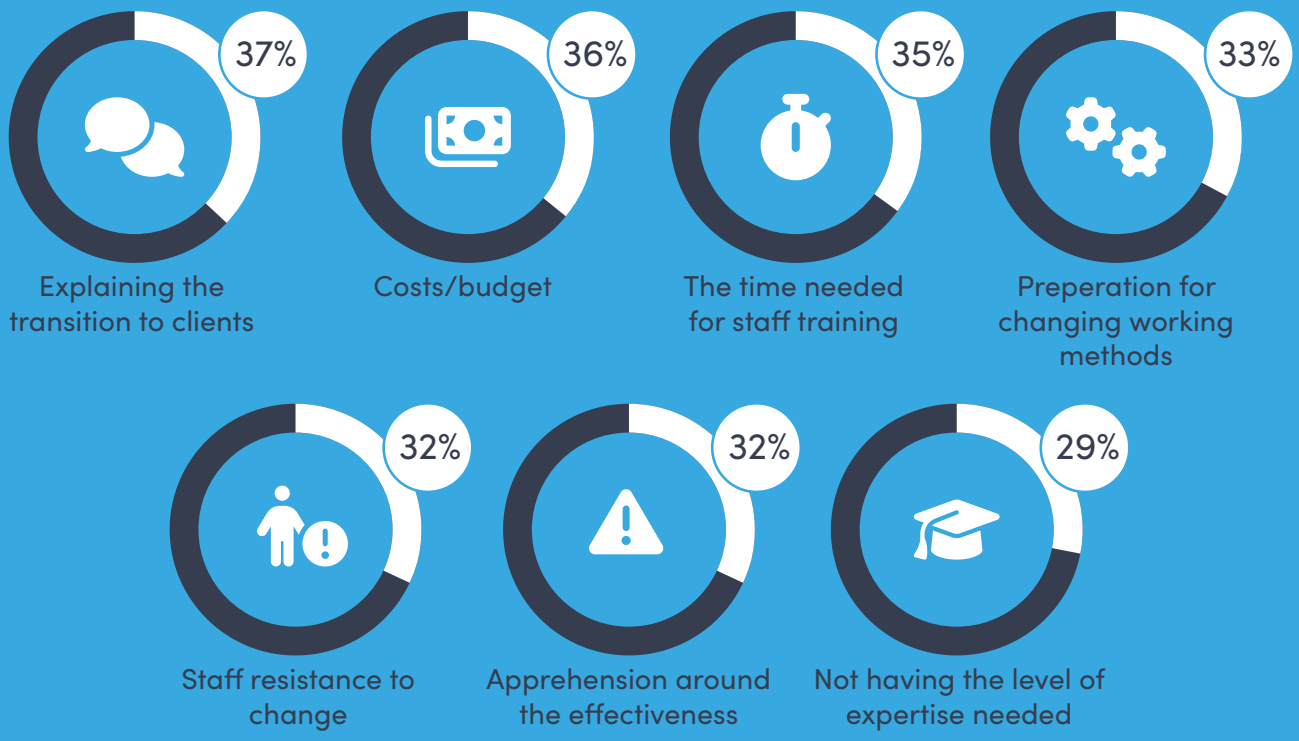
When it comes to the technologies above, the number-one barrier to implementation is the need to explain the transition to clients – with 37% of organisations citing this as a key challenge.

Following closely behind, 36% of organisations see high costs and lack of budget as key barriers to implementation.

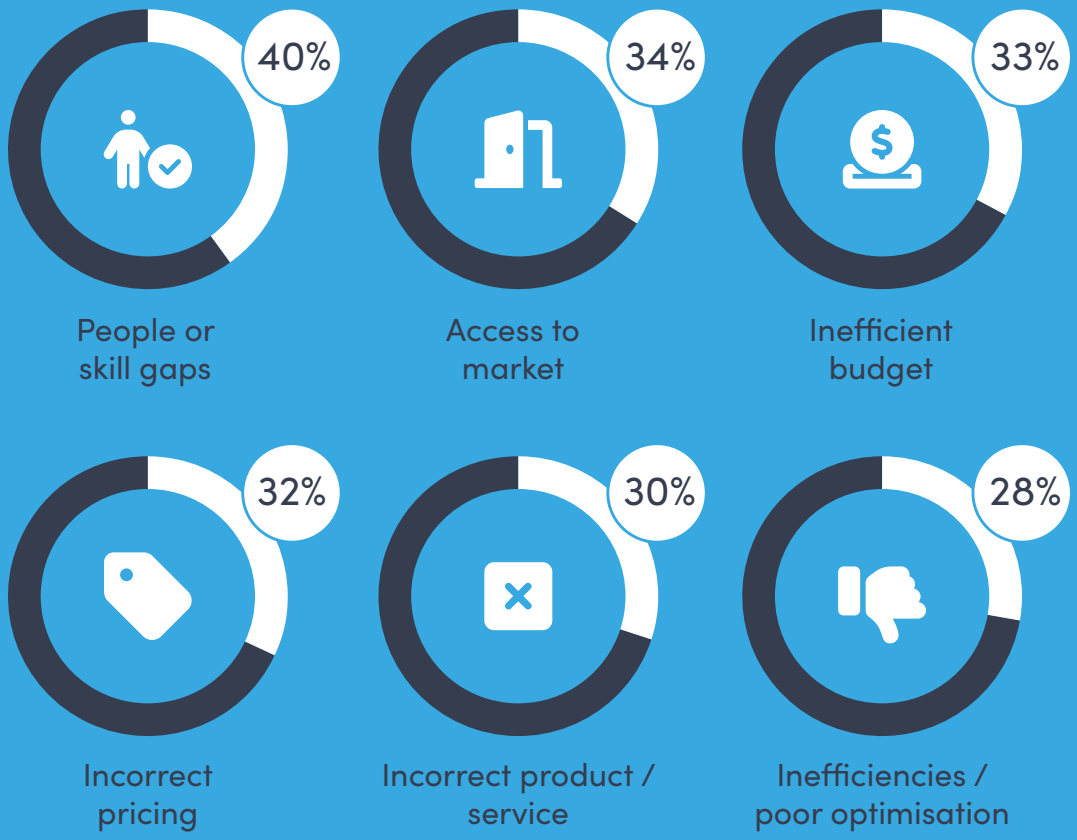
We also see a prominent theme around people and skills. Respondents cite time needed to train employees on how to use new technologies (35%), employee resistance to change (32%), and a lack of internal expertise (29%) as key barriers.

Lastly, employees feel apprehension about adopting these new technologies – with 33% of organisations feeling unprepared for changing their work methods and 32% feeling dubious about their effectiveness.

Q4: Why, if for any reason, have you not implemented the above mentioned points it in your organisation yet?



Q15: What, if anything, are the main barriers to growth in your organisation?



People and skills gaps are the key / top barriers to growth

The biggest barrier to growth is people or skills gaps - with 40% of businesses agreeing this is a key challenge. This can largely be attributed to the squeeze in labour supply that many industries are experiencing this year.

The manufacturing industry in particular saw 95,000 vacancies across the UK in Q2 2022 alone, according to data from the Office for National Statistics. This is an increase of 51% from the same quarter in 2021 - and is only set to worsen as time goes on.

Which manufacturing technologies do businesses plan to invest in by 2024?

Running a successful and profitable manufacturing business is all about planning ahead.

More than half of all businesses (51%) hope to soar ahead of their peers on their digital transformation journey within the next 1-2 years - with 100% expecting to be ahead of their competitors by 2026 at the latest.

But how do they expect to get there - and which key technologies will they implement to accelerate their progress?

Well, inner-platform integration is the clear winner across the board - with a huge 78% of businesses planning on implementing this technology by 2026.

In second place is self-optimising systems - with 77% intending to adopt this technology by 2026.

In joint third are asset tracking, process optimisation, and workflow integration - 76% will implement these by 2026.

Here's the full list of technologies that business plan to implement by 2026:

- Inner-platform integration **78%**
- Self-optimising systems **77%**
- Asset tracking **76%**
- Process optimisation **76%**
- Workflow integration **76%**
- Performance monitoring **75%**
- Digital products **73%**
- Condition-based monitoring **72%**
- Remote services **72%**
- IoT digital marketplace **72%**
- Asset health **71%**
- Energy management **70%**
- Process modelling **70%**
- Demand forecasting **70%**
- Inventory management **69%**
- Predictive maintenance **68%**
- Servisation **67%**
- Geofencing **65%**
- IT/OT integration **62%**

Interestingly, ranking the lowest are IT/OT integration (62%), geofencing (65%), and servitisation (67%).

Where do you rank?

So, now you know how your competitors rank in their digital transformation efforts, how does *your* business compare?

We've taken all the data we gathered as part of this report and used it to develop our **digital maturity ladder**.

This ladder is a benchmark of where businesses are in their digital transformation journeys - and what they need to do to progress. And it's built up of four key steps:

- **Connect** - Vendors at this stage have implemented a few key technologies but still have a long way to go before reaching Industry 4.0 readiness.
- **Integrate** - These vendors have deployed a few projects at scale but still have some way to go
- **Optimise** - These vendors have seen some level of business transformation but need to do more
- **Transform** - These vendors can create new markets but might have a few more small steps to take before reaching full digital maturity

Take our **digital maturity assessment** and get a free personalised report on:

- Which stage of the ladder your business currently falls on
- How you compare with your peers
- What you can do to improve

TAKE TWO-MINUTE QUIZ

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