

RESEARCH PAPER

Agile is as agile does

Understanding the role of agile development
and low-code solutions in the delivery of
digital transformation

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Executive summary

Enhanced business agility is the much-prized goal of digital transformation with the enterprise increasingly focused on building modern applications able to take full advantage of the latest digital platforms and technologies.

Going digital, however, is not without its challenges. *Computing* ran a survey among 100 UK IT decision-makers with professional knowledge and experience of application planning, development and management working at companies of between 100 and 5000+ employees.

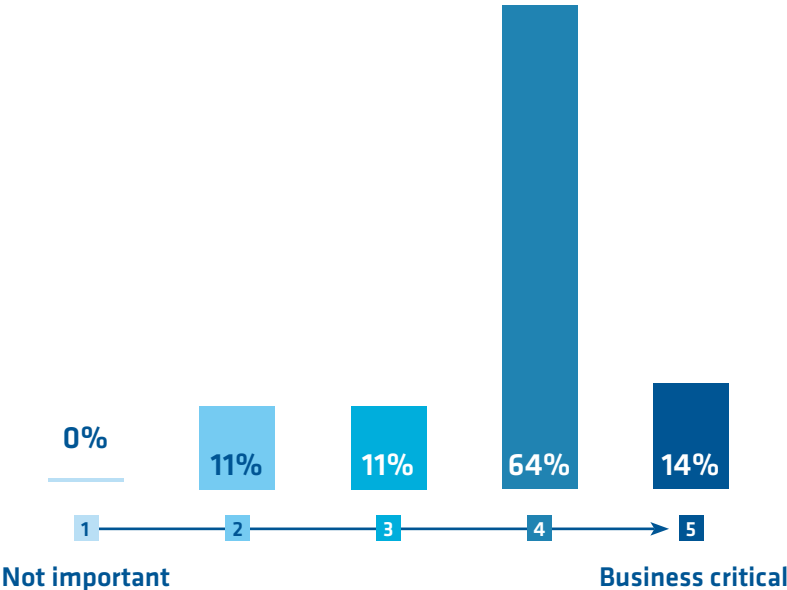
This resulting research paper examines the key issues facing the enterprise when it comes to designing, building and managing such applications. In particular, it looks at how far those organisations have gone down the agile development route as a means of improving developer productivity and at what else needs to be done, such as the adoption of low-code solutions, both as a means of maximising the benefits of agile and as a way of encouraging greater involvement from the wider business.

Whatever your take on digital transformation, most of us would agree that, fundamentally, it's all about making businesses more agile by leveraging modern digital technologies to better drive, manage and automate business processes. Unfortunately, few organisations have the luxury of starting from scratch, and aligning existing systems and working practices to the needs of the digital business is both complex and time consuming, with no one right way of going about it, and no guarantees of success.

That said, most organisations understand the key role played by applications in digital transformation – after all, it's through apps that digital technologies are applied and exploited.

Moreover, most would agree that, given the highly competitive and continually evolving nature of online markets, the ability to develop applications as quickly as possible is fundamental to digital success, as illustrated in Fig. 1.

Fig. 1 : How important to digital transformation is the speed at which applications can be brought online and/or updated in your organisation?



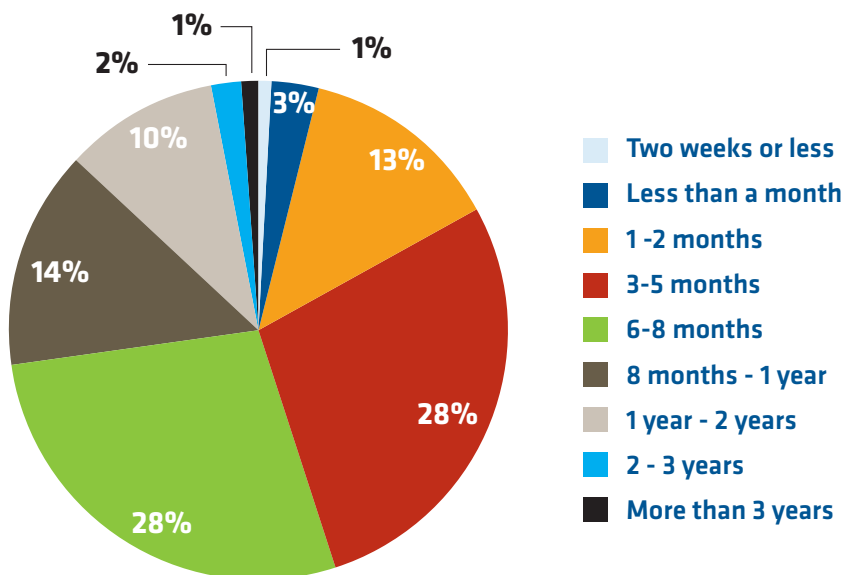
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Based on our survey, which covered development professionals across medium to large companies, the graph here shows (unsurprisingly) none at all prepared to dismiss rapid development as insignificant. In fact the majority (75 per cent) scored it at three or four on a 5-point importance scale, with a further 14 percent going so far as to rate fast coding as “business critical”.

Deeds not words

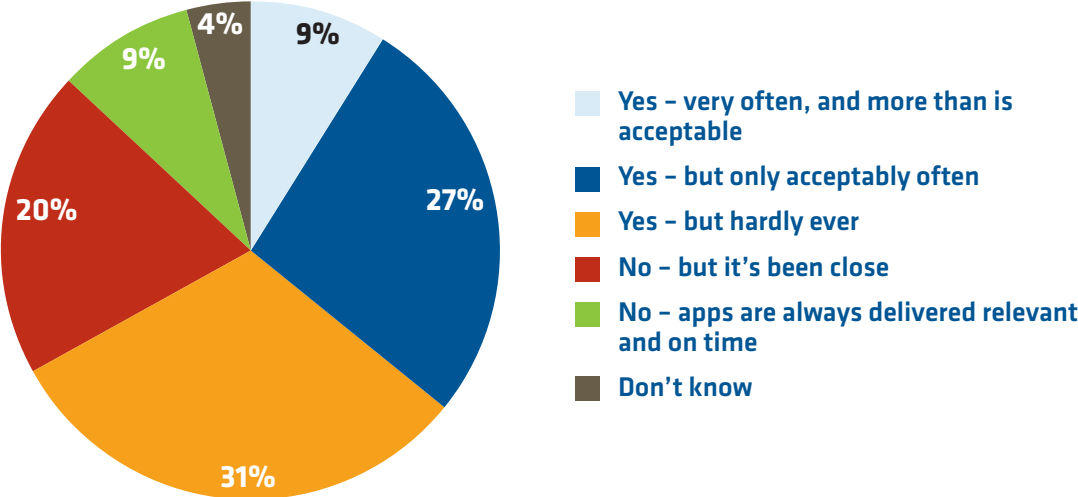
As might be imagined however, recognising the need for rapid development is one thing, but putting it into practice another altogether, as the chart in Fig. 2 shows.

Fig. 2 : How long does it take to get an application from concept to production?



When asked about actual development timescales, over half the companies polled (55 per cent) claimed that it routinely took them six months or more to get an application into production, with 13 per cent measuring the time required in years. Much of that is inevitably a reflection of project size and complexity, so some caution is needed when drawing conclusions. Furthermore, it has to be said that the figures are a lot better compared to those from similar surveys just a few years ago. That aside, the picture is far from one of rapid development across the board which, as evidenced by the results in Fig. 3 (*see next page*), can often lead to projects being delayed, re-worked or even cancelled because they've gone past their 'best-before' date.

Fig. 3 : Have you ever had to delay, re-work, recommission or cancel a development project because it was in danger of being out of date before completion?

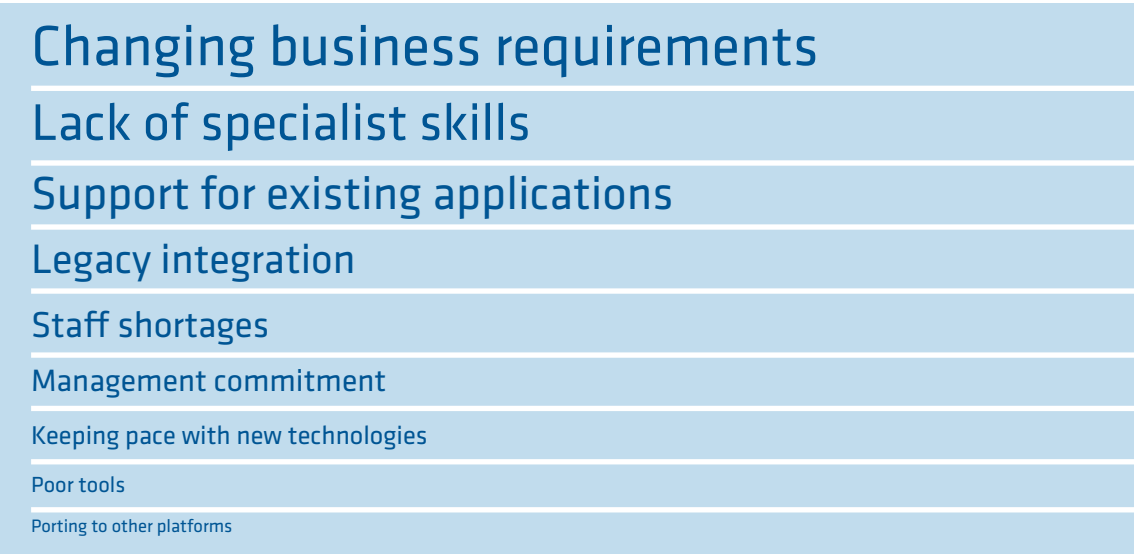


Highly disruptive, these figures show project overruns accepted as a normal part of the development process, with just nine percent of respondents claiming that the apps they delivered were always relevant and on time.

Bear in mind too that it's not just new apps that are likely to be affected here. Digital transformation is very much a moving target, making the flexibility to modify, update and adapt applications to meet changing business requirements equally important.

This is why we're hearing the phrase 'business agility' so much these days, and why catering for rapid change is now the top concern amongst developers (Fig. 4).

Fig. 4 : Rate the following common issues in terms of their impact on application development in your organisation



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At the top of a large pile of issues, keeping pace with business change isn't the only pain point keeping developers awake at night. Skills shortages came a close second in the survey, followed by the need to support applications once deployed, plus legacy integration, lack of investment, staffing and many more.

The good news, however, is that development teams and the organisations they work for have been far from idle and, as well as looking to technology for answers, have been busy modifying working practices to cope with the demands of digital transformation. In particular, through widespread adoption of so-called agile development methodologies – which of course are more commonly referred to as just 'agile'.

Let's talk agile

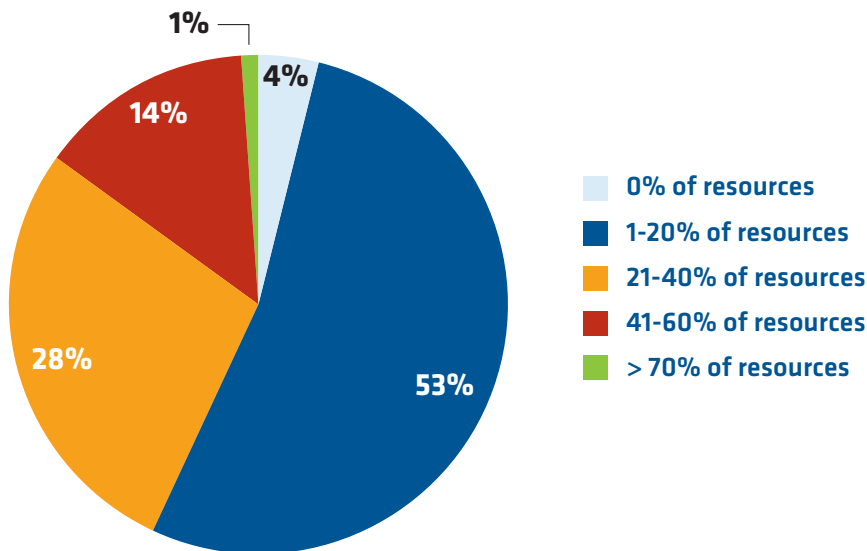
Prior to the formalising of agile development methods, most organisations will have followed a so-called 'waterfall' model (and many still do), effectively working their way through a series of sequential steps in order to get an application from concept to production.

Lengthy and inherently complex, this can make for projects that are tough to manage, prone to overrunning and with little flexibility to make changes or easily deviate from the original plan to. The waterfall approach can make it difficult to adapt projects to new business methods or incorporate new technologies. It also tends to be IT-driven, with little involvement from the wider business other than at the planning and testing stages which, with no working code available until late in a project, means a high risk of poor performing, potentially leading to unsuitable results.

Agile addresses these shortcomings by breaking projects down into more manageable tasks which can be worked on and tested independently. These are much quicker and easier to complete – in fact some approaches don't require full completion every time. This means deadlines are more likely to be met. Agile also allows for working code to be made available for testing early in the overall process, lowering the risk of a poor final outcome.

As the name implies, agile is particularly adept at coping with change which, given this as a top issue with developers, makes going agile something of a no-brainer. It's a conclusion further reinforced by the graph in Fig. 5 (*see next page*), which shows development teams having to commit significant resources to reworking applications in order to deal with shifting requirements.

Fig. 5 : What percentage of your development resources are spent reworking applications due to shifting business requirements?



Add to all this continual feedback and communication loops built into agile development models by default – involving areas of the business beyond IT – and you end up with a much more flexible approach. An approach which more than lives up to its name, and can prove to be far better aligned to the needs of companies looking to achieve digital transformation.

The question, then, is this – if agile is such a no-brainer when it comes to digital transformation, why are development projects still taking months or, in some cases years, to complete? More than that, why are the challenges of rapid business change seemingly so intractable, and what do organisations need to do in order to improve?

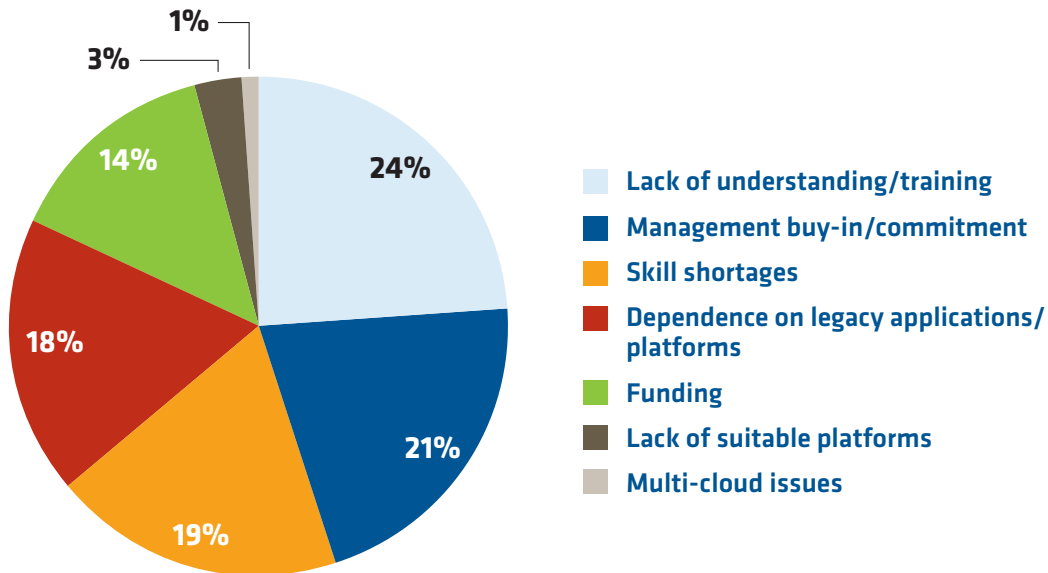
Could do better

Part of the problem is that, although widespread, agile is far from the only approach to IT development and implementations can vary considerably both in terms of the platforms and tools employed, and how they're deployed. Particularly in terms of scope, with many organisations limiting agile investment to the IT part of the equation whereas, in order to succeed, digital transformation and agile development alike need to give every part of the organisation a voice.

There are many reasons for this, but the biggest culprits are a general lack of understanding as to what agile is all about and poor training when it comes to implementation – as highlighted by the graph in Fig. 6, where survey respondents were asked to identify key factors preventing or limiting agile adoption in their organisations.

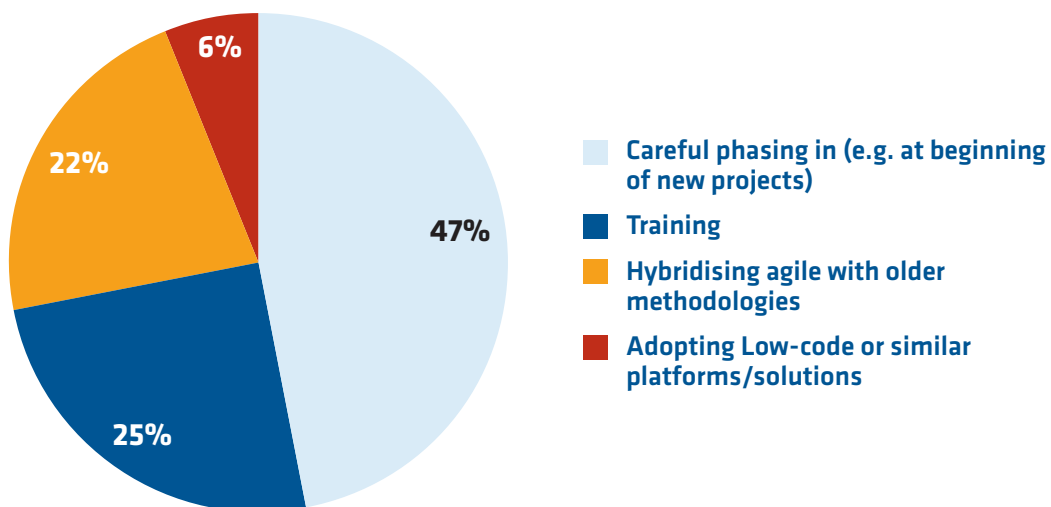
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Fig. 6 : What ONE factor do you feel most preventing/limiting the adoption of agile development in your organisation?



As well as the gap in knowledge and training, management buy-in and commitment and inevitable skill shortages are also seen as limiting uptake of agile, which isn't particularly surprising. Neither were the answers given when respondents were asked about how best to address these blocks (Fig 7).

Fig. 7 : What is the most effective method your organisation is/will/should be employing to overcome obstacles to agile development adoption?



Careful phasing in of agile methods got the most votes here (47 per cent) which, together with training (25 per cent), would clearly go a long way to spreading the agile word more effectively. As would hybridising agile with other older methodologies – in other words mixing agile with the best bits of other approaches.

A much smaller number (just six per cent) further highlighted the adoption of low-code platforms or solutions as an effective way of moving agile forward which, at first glance, might be dismissed as insignificant. However that figure is, again, a reflection of a lack of awareness when it comes to low-code and where it fits into the wider agile development landscape. This is a major concern, as low-code has the potential both to make developers more productive, and encourage involvement in application development by the wider business – beyond just IT specialists.

How low can you go?

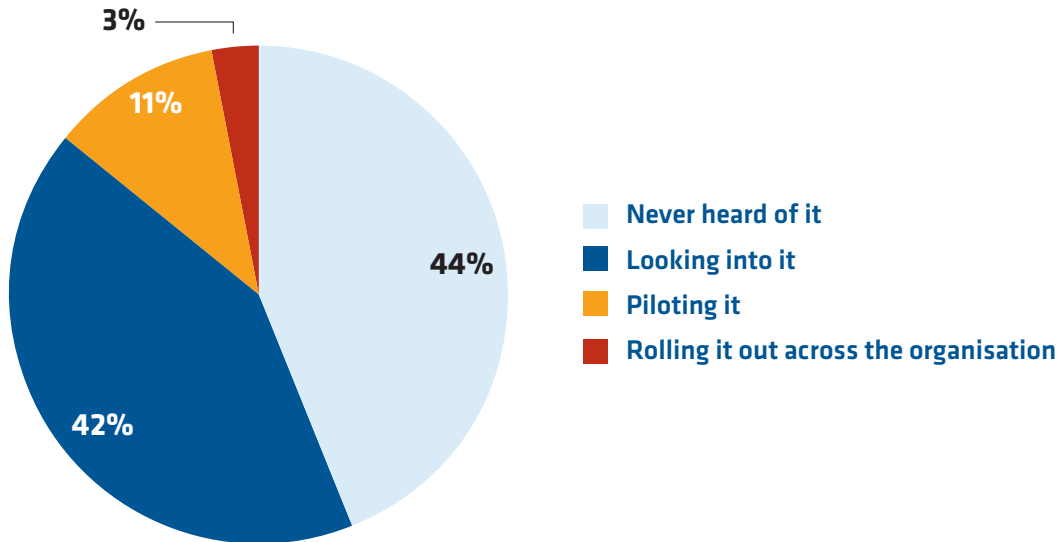
You don't have to be a developer to understand what low-code is all about and you don't have to be a developer to use it either. That's chiefly because, instead of having to hand craft code, these platforms do a lot of the required work for you based on business process models, in turn, built using visual design tools.

An extension of visual programming platforms, no real IT skills are required with low-code, just an understanding of the processes being handled. Crucially, however, low-code isn't designed to do away with developers altogether. Instead it frees them up to concentrate on more complex tasks beyond the scope of low-code platforms and other important things such as optimising the applications being produced and making sure they work with the rest of the infrastructure. Developers can also take advantage of low-code themselves, to enhance their own productivity, reduce errors and help them develop code better fitted to its business purpose.

Low-code can make a real difference when it comes to speeding up development, and is especially useful when it comes to coping with business change by empowering the wider business to get more involved in application development. Instead of adding to the backlog of tasks waiting for expert attention, for example, low-code can be used to empower business users to fine tune and tweak applications themselves. More than that it can help overcome the communication gap to deliver code more closely aligned with business need.

Again, just as with wider agile development solutions, low-code sounds like a no-brainer, making that six percent score in Fig 6. difficult to reconcile. Dig a little deeper, however, and we find that awareness of low-code and where it fits within the agile development story is gaining momentum. To this end, over half the respondents polled were either looking into its use, piloting it or actively deploying low-code in their organisations (Fig. 8, *see next page*).

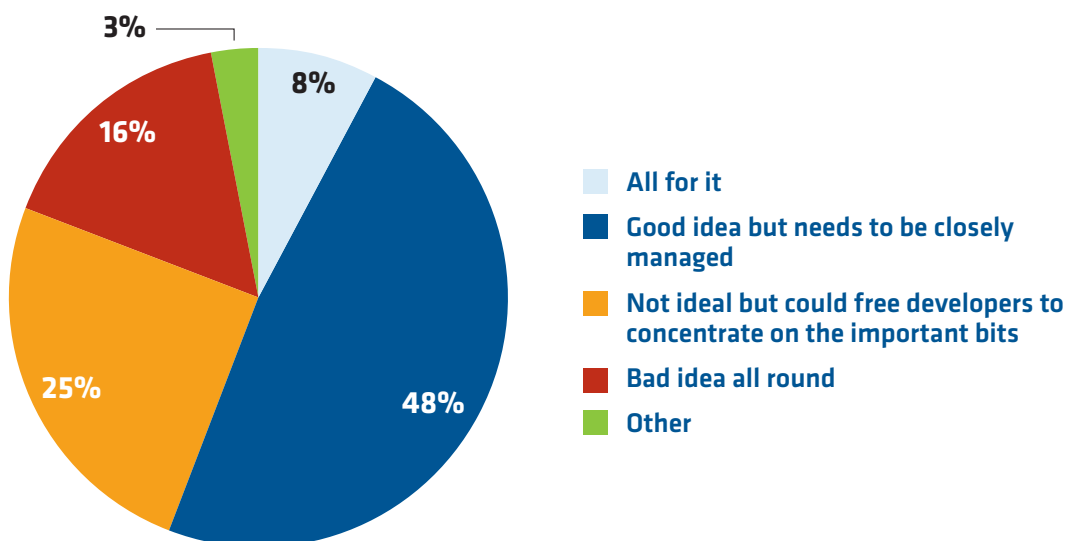
Fig. 8 : Where does your organisation sit when it comes to the adoption of low-code?



That still leaves almost half (44 per cent) still unaware, calling for more work to be done. Added to this, some organisations may have concerns about the management, security and compliance risks posed by so-called ‘shadow IT’ developments which they often consider low-code to be encouraging. Risks which, like those that once slowed public cloud adoption, can be mitigated by good management and which are far outweighed by the benefits low-code has to offer.

In fact, the survey found far less resistance to the idea of the ‘citizen developer’ concept than might be imagined. Only 16 per cent thought it a non-starter (Fig. 9) with the majority (89 per cent) in favour of low-code, albeit with just under half (48 cent) identifying with the need for close management.

Fig. 9 : What’s your opinion of the so-called “citizen developer” capabilities of low-code?



A quarter of respondents (25 per cent) also saw low-code as a way of handling day to day programming tasks and, thus, making better use of scarce specialist skills. Beyond that, and as part of a wider agile development approach, low-code also has the potential to break down communication barriers between specialist developers and the rest of the business.

Given a widespread understanding that digital transformation can't be left to IT alone, this is another compelling reason for enterprises to look into not just low-code, but agile development in general, as a means of achieving their transformation goals.

Conclusion

Applications have risen rapidly to become the lifeblood on which the modern digital business depends, making the ease and speed at which they can be developed, shaped and enhanced to cope with change a key driver of successful digital transformation.

A popular way of delivering on these aims has been by the adoption of agile development methodologies, platforms and tools, but there is still room for improvement. In particular when it comes to education and training, management commitment and staffing, all of which are widely seen as limiting agile uptake. There is also a need for greater involvement from the wider business, which agile and the use of tools such as low-code both encourage while, at the same time, enhancing developer productivity.

All of this can add up to easing passage for the enterprise to deliver the much-prized goal of business agility which, most agree, is what going digital is all about.

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