Driving digital IT transformation with DevOps – A KPMG in India survey report

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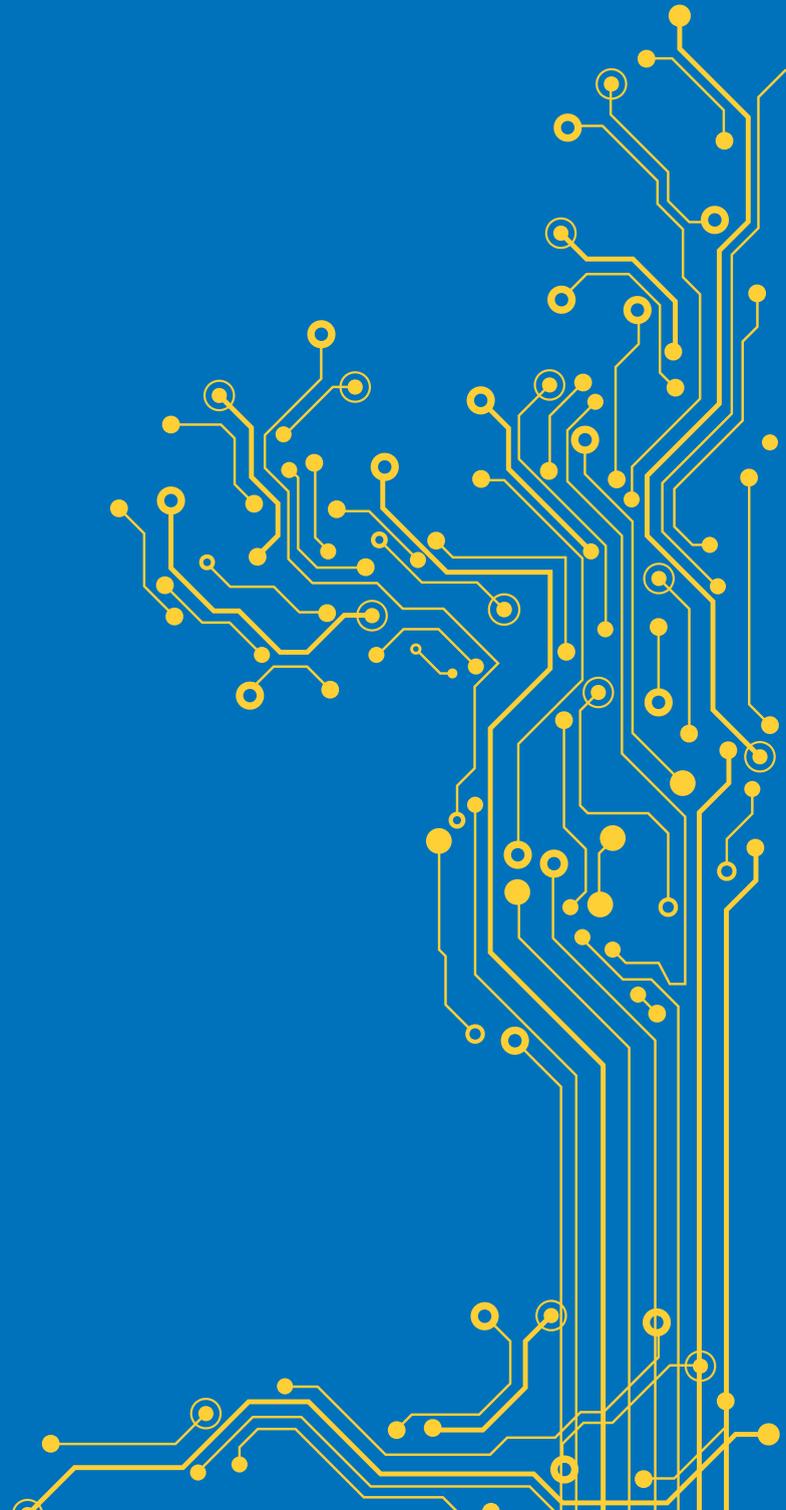
Insights and perspectives
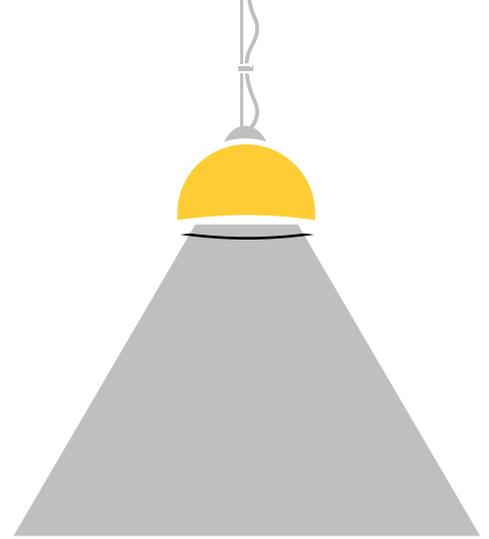
DevOps is playing a front line role in many organisations. With different avatars and connotations across industries and domains based on their specific needs, the umbrella of DevOps has only become huge and more complex. Our report aims to provide clarity to organisations who are:

- sitting on the fence, and unsure about where to start and still debating the applicability or efficiency of DevOps

- have been planning but not really taken the big step towards adoption

- have adopted but not scaled up

- and for those who are operating at a good rhythm but need affirmation on their direction of evolution.

With the above objectives in mind, KPMG in India conducted an open survey through which we have obtained responses from participants all across the globe, across large and small enterprises and across multiple sectors, domains and roles focusing on churning out newer features and

working on smoothening their time to market mechanisms.

We have also analysed upcoming trends and mindset shifts towards adoption of DevOps.

Over a period of three months, close to 100 enterprises have shared their responses with us.

As expected, many of the respondents have been from the financial industry, close to 40 per cent, with almost 20 per cent coming from hardware and manufacturing industry and closely followed by ecommerce and telecom at 17 per cent each. The remaining responses came primarily from healthcare and media and few other sectors.

We hope you find this publication insightful.
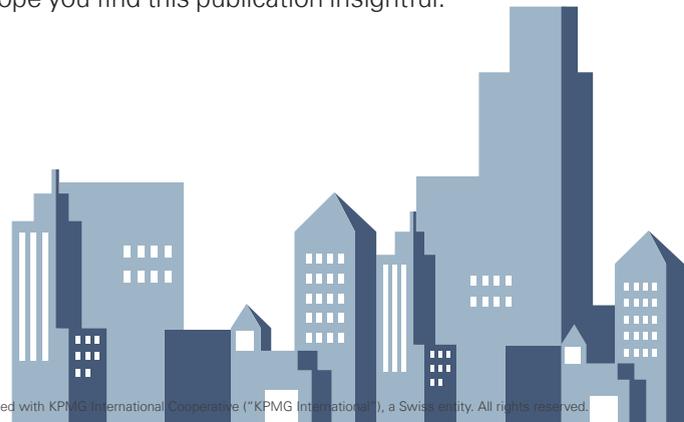
Table of contents
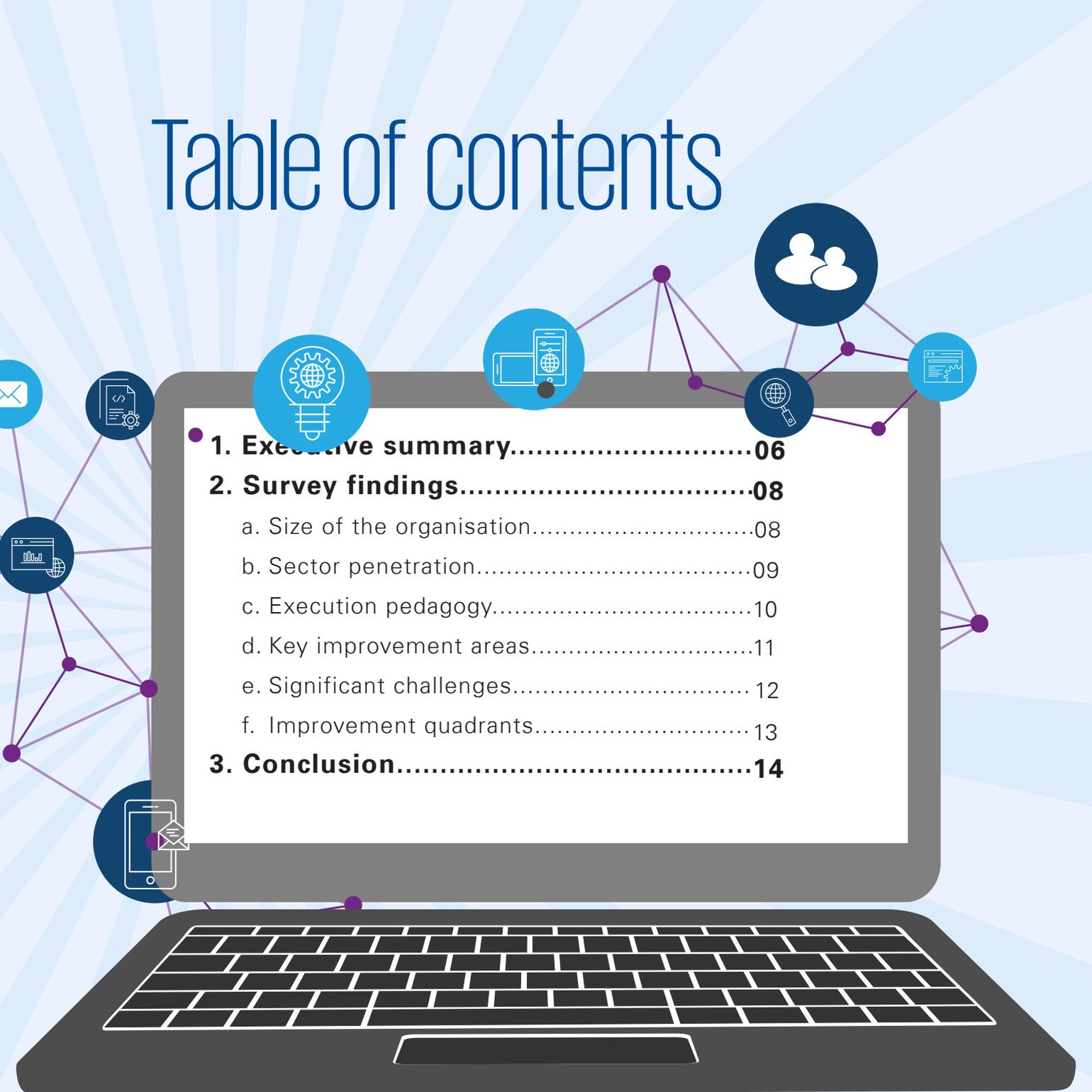
Executive summary

In the heterogeneity of the businesses around, one dimension which constantly exists is technology. How it gets applied and gets immersed in the fabric of delivery, sales, people, culture and of course consumers is many a times the difference between a large and yet scalable organisation vis-a-vis an organisation only looking at business opportunities from a distance but nowhere near to winning them.

Becoming a leader is only possible if the dimension of technology is well defined. With the vast array of technology solutions that an enterprise employs to deliver a service, it becomes even more significant to invest in a solution, which manages the quarry of requirements till release and post it without disrupting the customer experience. It is not a template to be applied or a framework to be adopted. In many ways, such a transformation pretty much pulls all the levers of an organisation to ensure that benefits are maximised and is a customised solution as per the organisation's goals.

Such a customised service is phrased DevOps, and is a prime focus area for CIOs and CTOs alike. It allows an organisation to remain flexible in terms of its enterprise architecture and adoption of new solutions or even optimising the current stack. DevOps has the strength to not

only bring about technological advances by early simulation of events, much like the genome study, but also impacts greatly the ways of working, the organisation structure and, in many cases, determining the fate of the products and services in the fast moving world of SMAC, IoT, blockchain and digital.
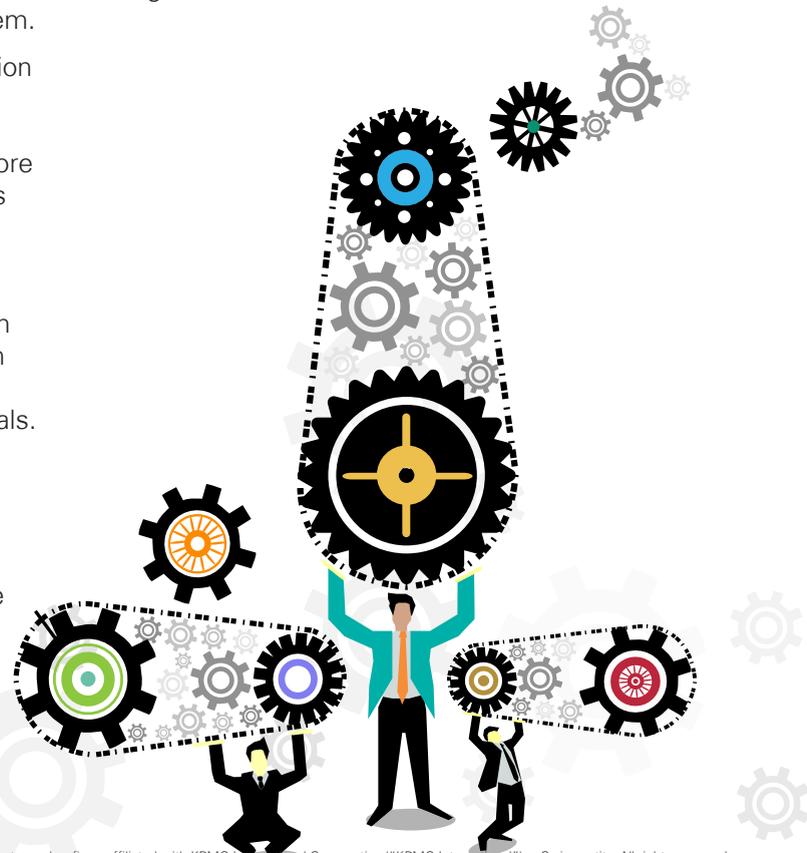
Some of the key findings from our survey listed below do help validate our views:

DevOps is one of the key underlying components while setting up smooth ideation up to release to market

Enterprises, irrespective of size and sector, are moving towards adopting DevOps in their delivery framework

Most of the GICs (Global In-house Centre) are heavily focused and aligning their business modules and transformation activities to DevOps way of working

Enterprises are increasingly seeking external help in defining DevOps strategies, converging both business and technology streams to remain future ready and relevant

Tools have undergone a major transformation, and are completely aligned with DevOps way of working offering rich integration platforms and open community.

Survey findings
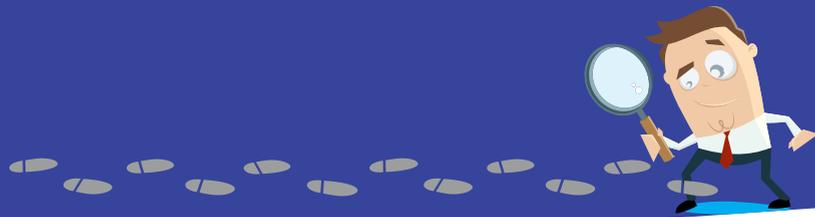
Based on the survey findings, we have discussed below some of the trends which we see within various sectors and how each sector is poised to increase the adoption of DevOps.

Size of the organisation

DevOps is now an important agenda for organisations of all sizes. However, we have noticed that it is either the small enterprises or boutique firms or even start-ups who are more aggressive in implementing DevOps making up 25 per cent in total of our respondents.

Figure 1: DevOps adoption across various organisation size
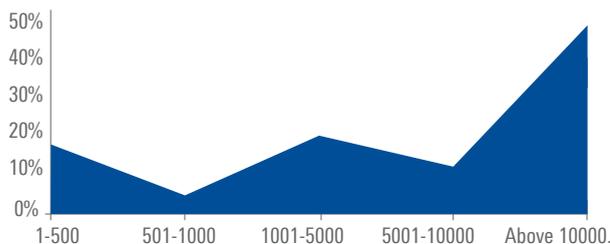
Mid-tier firms that make up close to 35 per cent of our respondents are still largely at planning stage and working out their schemas. The biggest and the largest case studies are coming from the large global enterprises who contribute 40 per cent of the respondents base, and are in advanced

Figure 2: DevOps adoption across sectors view

| 40% | 8% | 17% | 17% | 19% |
| Financial services | Healthcare | Retail and e-commerce | Telecom & media | Manufacturing and Others |

stages of adopting the DevOps concept and have progressed to a roll out phase. Another interesting fact is that among the large enterprises, it is the service driven enterprises who constitute roughly 40 per cent of respondents and are more active in planning to implementation as compared to large product organisations who are expected to be ahead in the curve but contribute only close to 20 per cent within large organisations. We foresee a much stronger DevOps adoption among product organisations as the market forces converge the technology with business and would expect teams to adopt changes with minimal disruption. Such an adoption would likely push these organisations in developing products, which not only serve the business needs but also sustain future changes. We also foresee a much stronger adoption of DevOps, especially within the GIC community in India as they set up, scale and stabilise their operations in India while aligned with multiple stakeholders across geographies.

Sector penetration

DevOps is in principle a technology change management methodology encompassing associated processes, people and culture management. Owing to its potential in improving delivery pipelines and catering to the dynamism of the organizational landscape and regulations, we noticed that financial services at 40 per cent is the biggest consumer of DevOps, followed closely by manufacturing, e-commerce and telecom/media with close to 20 per cent.

Figure 3: Sector view

- Financial services
- Healthcare
- Retail and e-commerce
- Telecom & media
- Manufacturing and Others
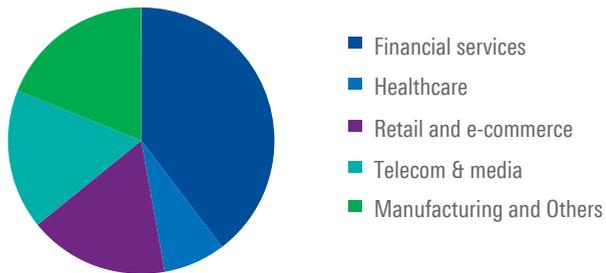
Industry view: We also foresee a common trigger for both healthcare and financial services sectors whereby they reduce their overheads and optimise greatly their investment on technology so as to provide sufficient capital and bandwidth for their core offerings to their end users.

Figure 4: Industry view
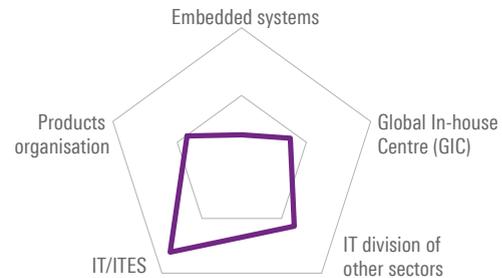
Sector view: Companies in the healthcare sector are planning their foray into DevOps while other sectors such as energy are also working out their strategies. We foresee a wider and more aggressive adoption of DevOps within healthcare, in particular, which will also be supported by the product organisation offerings in the domain. Financial hubs will continue to lead owing to their overall working environment and regulatory constraints and a greater need of synergies among their departments to rule out any malpractices or security threats considering the innovative interfaces that the market is pushing on them.

Execution pedagogy

In the survey, 47 per cent of the respondents agreed that DevOps initiative is primarily triggered as a leadership initiative who direct their teams to develop strategies and implementation plans to oversee transformation. This execution pedagogy is closely followed by market dynamics where close to 31 per cent of the respondents agree that based on market research, peer positioning and their vision statement, enterprises are moving towards wider adoption of DevOps. Another important trigger for DevOps adoption and implementation comes from internal surveys across teams demanding a change in delivery methodology supported by DevOps and initiatives like technology modernisation.

Figure 5: Execution trigger for DevOps in an Industry view
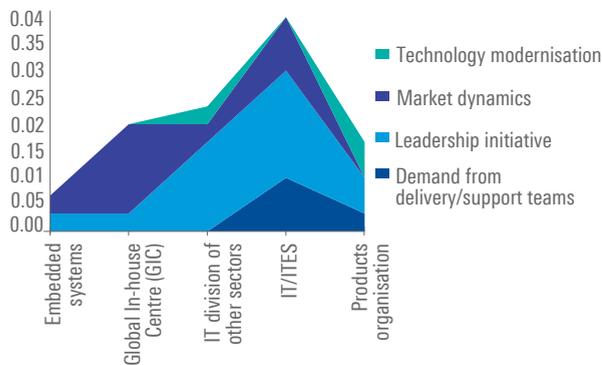
We also witnessed that all such triggers are either managed by creating Delivery CoEs in conjunction with external consultants or run by business excellence teams who would manage the entire roadmap and report on the progress, which as options was voted by 78 per cent of the respondents. This mode of execution is mostly popular in the GIC setup and both product and

service organisations. Other setups such as back-end IT teams of organisations in the manufacturing space typically have quality groups or form an independent CoE to run the DevOps adoption. Quality teams primarily appear due tothe fact that use cases are very specific and vetting of external skills and credentials takes a much longer time than identifying skills within. As a trend we don't see any major changes to these. Leadership mandates will continue to guide the overall adoption and it will be more prominent in the technology-led industry. External consultants would be needed more as there are high stakes and limited time for such transformation and enterprises need to be more successful in the first wave rather than experimenting and approaching success. This again is based on the need to optimise faster and better so that core services, be it financial or healthcare or civil or telecommunications etc., can be focused upon.
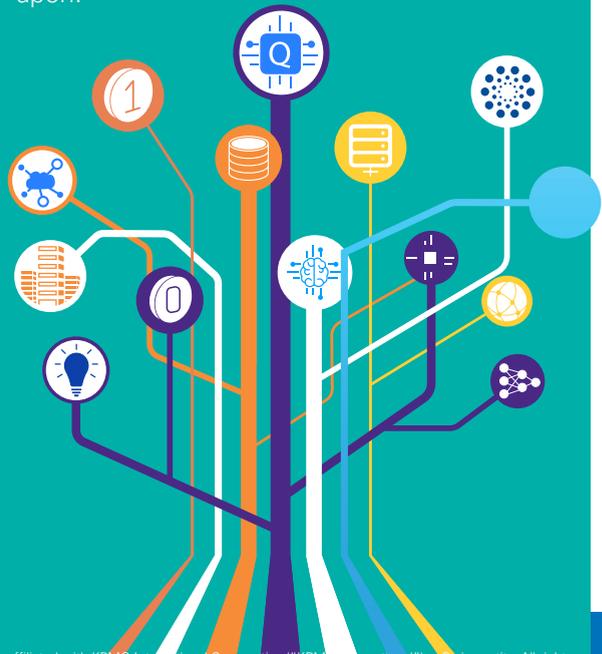
Key improvement areas

While there are multiple models in which DevOps is gaining traction across sectors, the nodal benefits which organisations have experienced are in the areas of requirements traceability and a seamless automation of repetitive tasks or condition-based tasks in a cross-functional setup during release and deployment. Nearly 37 per cent of the respondents across sectors have voted for this feature based on time-to-market capability and voice of customer.

Figure 6: DevOps benefits in a sectoral view
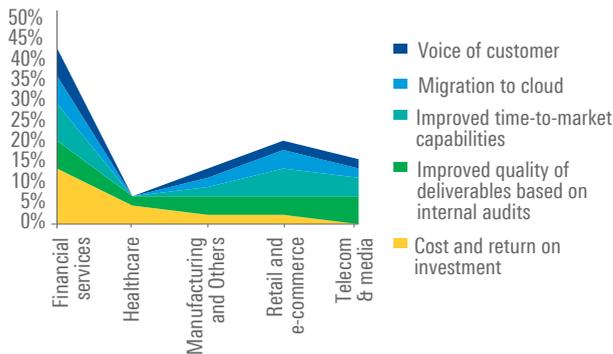
Almost 25 per cent of the respondents across sectors also feel that with better checks configured within the system, internal audits have become more efficient, and have ultimately helped in the last mile delivery to the customer or end user. Another interesting finding from the survey is that across domains and sectors, there is a clear direction evolving on migrating to cloud. This, we feel, is very important from the view point of sustainability and continued investment in the further maturity of the organisation when it comes to DevOps adoption and cost and availability. Retail, e-commerce and telecom lead the pack when

Figure 7: DevOps benefits in an industry view
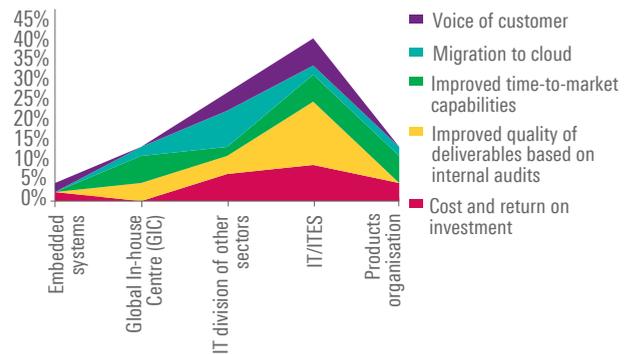
it comes to the aforementioned benefits with close to 43 per cent, closely followed by GICs and seconded by service organisations. Manufacturing, telecom & media and other important sectors such as healthcare are also raising their ante. We foresee a wider play in this space where benefits would be more attuned to the respective industry or domain space environment guided by global and local regulations. Benefits are trending towards internal optimisation and mobilisation of resources, be it or human, and focused heavily on providing innovative services to their end customers.

Significant challenges

DevOps comes with its own set of challenges when it comes to implementation. This is further complicated by the business needs and competitive environments for which teams have to be ready. We witnessed that across sectors, 43 per cent of the respondents believe that the complication of getting the right requirements from the end user community eventually into release manifesto is the biggest challenge in getting the right benefits of DevOps.

Figure 8: DevOps challenges in an Industry view
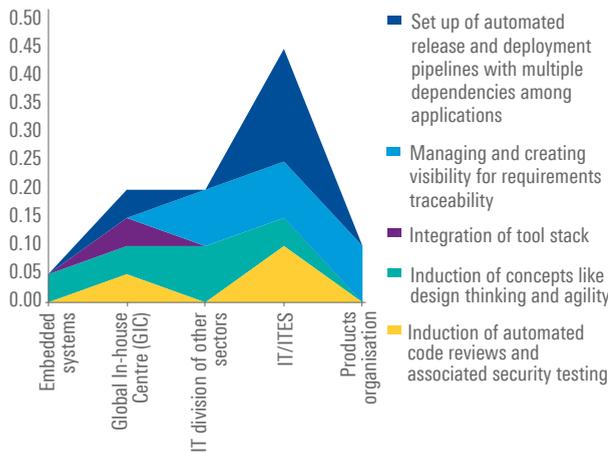
This challenge is something which echoes with the benefits, and also directly improves the capability to market faster across sectors and domains. This is followed by the adoption of concepts such as agility and design thinking with 20 per cent respondents voting for it and suggesting that they are more complimentary in nature to DevOps but need careful precision to make them work together in a changing world. Automation of

code standardisation and quality reviews stands at 12 per cent, which still shows a lot of manual intervention and loss of valuable productive hours, and definitely needs a focus and push within the system.

Figure 9: DevOps challenges in a sector view
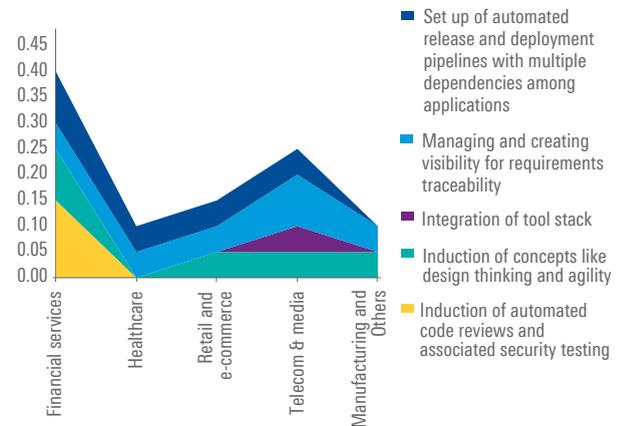
Bug fixing is still a territory, which is yet to gain ground in the overall scheme of DevOps whereby teams can ensure that staging is more focused on quality. We do foresee a wider play of delivery CoEs (Centre of Excellence) in conjunction with external consultants as experience gained for a particular domain or team can be very well replicated or utilised to shorten the overall improvement cycle. An outside-in approach and solutions provided by external consultants are other key benefits that would help enterprises across sectors to scale up faster, which may deal with a point solution or a design of a target operating model or the optimisation of tool stack or a combination of all of these.

Improvement quadrants

The biggest benefit or improvement that businesses have seen with the use of DevOps is in the marked improvement of delivery. This method has been mastered by service enterprises for their end customers with 50 per cent of them voting for it. GICs and other IT units which have a very close business and technology operating model are also gung-ho about their adoption journeys and benefits achieved with close to 46 per cent of them giving it a thumbs up. Businesses have also realised that multiple iterations of implementation of DevOps have helped them graduate to higher levels of maturity, thereby enabling them to realise a better return on their investment and improved readiness in terms of releasing to market. Financial services GICs have utilised this feature to their benefit to the maximum, followed by healthcare GICs. Product organisations have also done multiple iterations to a certain extent, but a good story for discussion is still awaited from this sector.

Figure 10: Improvement shown across industries

- Embedded systems
- Global In-house Centre (GIC)
- IT division of other sectors
- IT/ITES
- Products organisation

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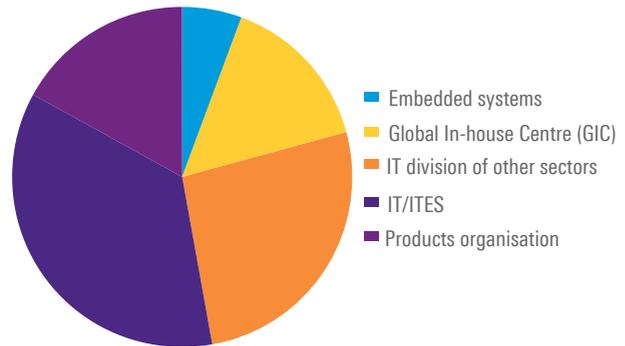
Conclusion

From our survey and further analysis, we can conclude that DevOps has shown considerable potential in helping enterprises improve the bottom line by optimising internal cost, effort and process, across people, process, technology and collaboration layers. DevOps is significantly growing and making an impact on the topline of organisations by improving not just the time-to-market but also amplifying the voice of customer and ultimately helping organisations deliver the exact need in minimum time.

The umbrella of DevOps would keep increasing as the lifecycle components keep churning out challenges, which are multi-dimensional, and can be addressed via a change within people, process, technology, tools and collaboration layers in short key focus areas of DevOps.

Security and regulatory constraints would serve as a boon to the adoption of DevOps as units within organisations become more integrated and reduce fallacies, which can creep in through human intervention.

The value of external expertise is another key finding of the survey as we believe that it brings in a lot of value to the enterprises, and reduces efforts otherwise spent on re-inventing the wheel.

GICs across sectors, and especially within financial services, are the key early adopters of the DevOps wave. Trends clearly indicate that product organisations and healthcare as a domain are going to be other key adopters of DevOps while services companies would continue to invest and stay active in this space.

DevOps would remain result-oriented and continue to make an impact. It would remain domain or sector agnostic. It will be leading and defining offerings from the wider product and services community, which are more integrated with the surrounding ecosystem.

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