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TECH 2022

Digital innovations that will impact enterprises in the year ahead

Thinking forward or catching up? Technology uptake in 2022 will be a key differentiator.

Enterprises are set for a challenging year in 2022. It's the year of the hangover, with the impact of 2021's chip shortages, pandemic measures, remote working demands, security concerns and technological leaps still likely to be keenly felt for the most part of the year.

It's also a year of opportunity. A whole host of technologies that have been waiting on the side-lines throughout 2020/1 will this year step into the spotlight, with practical use cases for the likes of Private 5G implementation and Privacy-enhancing computation (PEC) finally bringing initial investments to fruition, and creating more mainstream demand for previously 'conceptual' technology.

Yet with every new technology and innovative way of working, an old process, application or platform will become redundant. For enterprises, it's going to create a heady mix of forward-thinking technology uptake, and urgent damage-limitation. Businesses need to ensure that they incorporate technology awareness, data analytics and cutting-edge business intelligence at leadership level, in order to not only identify exciting opportunities, but counter the risks that ongoing disruption poses to every market around the world.

As a global technology talent acquisition specialist, our first-hand industry knowledge has given us a unique insight into the evolving technology market. In this guide, we take a look at some of the most interesting technology trends of 2022, spanning Communications, Architecture, ERP, BI, Data & Analytics, Software Engineering & DevOps, Infrastructure, Cloud and Cyber Security.

Taking a commercial, not academic, perspective, we examine the innovations that are taking place in these core specialisms that are likely to have a tangible impact on enterprises over the course of the year – as well as the vital role that talent acquisition will play in the months ahead.

IN THIS GUIDE:

Cloud native platforms become a competitive advantage.

Hybrid working is here to stay – but it's not only thanks to Covid restrictions. Organisations now realise that hybrid business models are more practical, productive and agile: allowing them to maximise revenue, broaden their talent acquisition, and take a more flexible, reactive approach to resourcing. According to Gartner, by 2023, 75% of businesses with a 'dispersed workforce' (i.e., hybrid) will experience 25% faster revenue growth than their non-dispersed competitors.

For hybrid to work, organisations need cloud solutions – but they need to go beyond specific, ad-hoc applications. In 2022, cloud-native architecture – microservices, containers, serverless functions and other solutions – will provide a flexible and scalable infrastructure to support hybrid enterprises.

75%

of businesses with a hybrid workforce will experience 25% faster revenue growth than their non-dispersed competitors

More businesses will adopt a 'building block' approach with composable architecture.

60%

of organisations will transition to composable enterprise solutions throughout 2022

Composable applications allow businesses to pick and choose the applications they want in their architecture: it's essentially like stacking building blocks to create the structure you need. The biggest benefit is that it enables businesses to preserve their legacy applications while modernising their architecture and exploring new options – without the disruption of a complete migration to a new platform. Around 60% of organisations will transition to composable enterprise solutions throughout 2022, in search of rapid innovation, greater flexibility and a solution to hybrid working.

There are three parts to composable applications. Firstly, businesses need to reframe their thinking to conceptualise this new modular approach and what it means for their business. Secondly, they need the composable architecture, that provides the foundation needed. Lastly, they need to choose the composable technology itself: these applications are the 'building blocks' that allow them to create the solution they need.

PEC provides data insight without the intrusion.

By 2025, 50% of large organisations will have privacy-enhancing computation (PEC) – and the 50% that don't are likely to need it. PEC is a business' best defence against escalating cyber threats, as it builds cyber security measures into an enterprise's architecture, rather than treating it as an additional layer.

According to Itay Levy, CEO and co-founder of Idetiq, "PEC allows different parties to extract value from data and get actionable results from it without the data ever being shared with those parties. It's a way to collaborate, without sharing personal or sensitive data." There are three types of PEC, each with a slightly different method. The first provides a trusted environment for data processing and analytics to take place. The second de-centralises data processing and analysis. The third transforms the data before it's processed or analysed.

With 79% of US adults surveyed by PEW expressing concern with how businesses use the data they have collected about them, PEC provides an opportunity for businesses to use data to gain valuable insight, without intruding or damaging consuming trust.

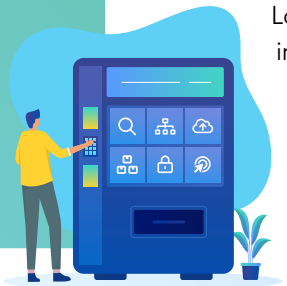
> "PEC allows different parties to extract value from data and get actionable results from it without the data ever being shared with those parties"

'Pick and mix' software brings democracy to resource planning.

65%

of agile transformation adopters report a significant impact on their financial performance

Low-code and self-service solutions essentially bring a vending machine, or pick and mix, approach to enterprise resource planning (ERP) that gives businesses the flexibility they need to scale fast – even if they don't have the tech skills available in-house. This agility is critical for organisations as they navigate an increasingly disruptive, changeable landscape – a study by McKinsey earlier this year found that 65% of organisations that adopted successful 'agile transformation' reported a significant impact on their financial performance, a figure that is set to rise as 'flexibility' becomes a need, not a nice-to-have.



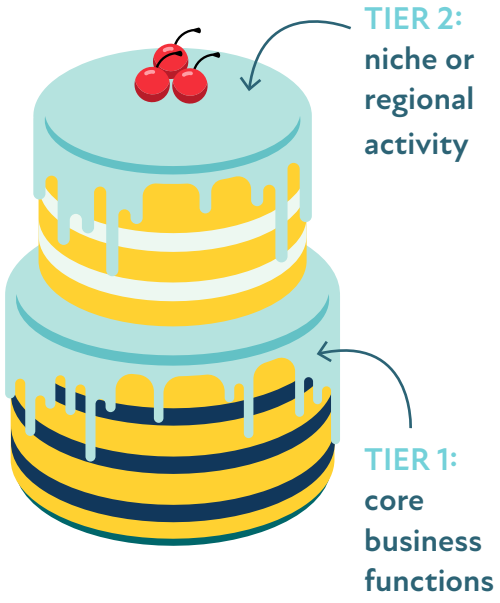
Low-code solutions provide a menu of options to choose from, instead of requiring you (or a team of developers) to code every solution from scratch. Self-service ERP options, meanwhile, give users access to a whole range of business functions, whenever they need them. By 2030, the market for these platforms is expected to generate $187 billion, with a CAGR of 31.1%, as more businesses opt to take hands-on control of their ERP.

Two-tier solutions create a layer cake of local ERP and central data.

The more diverse your business, the more complex your Enterprise Resource Planning (ERP) needs to be – but not with two-tier solutions. Two-tier provides a layered approach to ERP, helping businesses with regional subsidiaries or hyper-niche functionalities to benefit from localised ERP solutions as well as broader, business-wide ERP.

Tier 1 handles core business functions like HR, finance, procurement and so on, while Tier 2 ERPs manage more specific activities like marketing, sales, or manufacturing, as well as regional differences like tax and regulations. Yet both tiers have access to the same single source of data, allowing for master data management that benefits the entire enterprise.

But be warned: two-tier ERP's need to be integrated correctly to work effectively, and data governance needs to be perfectly communicated to avoid data quality issues that could jeopardise the whole organisation. As a result, strong data leadership is critical to its successful implementation.



Internet of Behaviour will gather "digital dust" to improve customer experience.

40%

of the global population will be tracked digitally to influence behaviour by 2023

Internet of Behaviour (IoB) is a step up from Internet of Things (IoT). The IoT already collects data from billions of physical devices around the world, but IoB connects that data with real-world actions. It's a mix of technology and behavioural psychology, that can help organisations to analyse and influence individuals.

Gartner describe it as gathering the "'digital dust' of people's daily lives" to get better insight and take more targeted action. For instance, a retailer could use IoB to gain a more 'human' insight into their customers' behaviours and provide an experience tailored to them. By 2023, the actions of 40% of the global population will be tracked digitally to influence behaviour, via IoT devices and online behaviours.

IoB poses incredible opportunities with data, but it also comes with associated risks. It can be an ethical minefield that needs to be handled responsibly by business and technology leaders, with users weighing up the benefits to the customer with security and intrusion risks. With large volumes of very personal data being collected and analysed, IoB needs to be combined with strict cyber security protocols, like PEC.

Deepfake fraud becomes a real threat.

We've all seen deepfake technology in action, whether it's Tom Cruise running for President or a convincing recast of Back to the Future. Yet since sophisticated deepfakes started emerging in 2017, we've all known that something much more sinister lies beneath.

Deepfakes manipulate visual or audio content using machine learning and AI to mimic a person's appearance or voice. With more security measures based on voice and facial recognition, organisations need to ensure they have robust security measures to protect against increasingly advanced deepfake fraud. There's also the risk that deepfakes could be used for phishing – for instance, hackers approaching customers or employees to extract confidential information – and for blackmailing.

43%

rise in traffic around deepfake attacks seen at one cyber security firm since 2019

Cyber Security firm IntSights' Alon Arvatz disclosed that the company has seen a 43% rise in traffic around deepfake attacks since 2019, and expect to see it being more widely used by hackers in 2022. As far back as 2019, a CEO was scammed into transferring €220,000 by a hacker impersonating the firm's parent company's chief executive. Increased security threats from deepfakes seem inevitable, and organisations will need to arm themselves with the right technology and strategic thinking to protect themselves in 2022 and beyond.

Businesses act on the link between DevOps and business outcomes.

50%

higher growth rate achievable for businesses with elite performing engineering capabilities

Businesses with elite performing engineering capabilities are twice as likely to achieve their organisational goals and achieve 50% higher growth rate. Organisations in 2022 should be turning their focus to DevOps if they want to reap commercial results from their technology, with developer productivity becoming a key issue to remain competitive in increasingly disruptive markets. Digital front-runners Netflix and Google have both created teams to address this, with the former creating a dedicated Developer Productivity team, and the latter hiring engineers for its Engineering Productivity function (EngProd).

With development environments moving increasingly to the cloud, organisations can also benefit from greater flexibility and speed, with developers able to onboard technologies quickly and easily. A poll of UK software developers in 2021 found that 40% can now deliver new features on the same day they are asked for it, if not within mere hours, thanks to cloud platforms.

ERP gets an intelligence boost with iERP.

By 2023, enterprise resource planning (ERP) data is expected to make up 30% of all AI-generated predictive analyses and forecasts. For this to happen, businesses need to adopt intelligent ERP (iERP) that fully incorporates automation and intelligence, rather than treating them as 'add on' applications. But why does it matter?

Due to its fast-moving nature, data is essentially a perishable item. As SAP's Oliver Schoenborn explained earlier this year, data loses value the longer it is 'kept' and not 'used'. The data being collected by Big Data generators like the IoT is often held in stockpiles that theoretically 'spoil' if they are not shared and used – what use is instant insight if you can't unpack it there and then?

iERP sets out to address this problem, integrating AI, Machine Learning, blockchain, Big Data, and IoT directly into ERP, building data-driven automation into the fabric of the business. As 5G drives adoption of connective business technology, businesses need to act fast on iERP in 2022 if they want to grasp data-powered opportunities.

30%

of all AI-generated predictive analyses and forecasts will be made from ERP data by 2023

Collaboration gets real time thanks to asynchronous comms.

9+

hours a day are spent by employees connected to collaboration platfroms

Thanks to remote working, an employee in Bali can (in theory) work with another in Newcastle. However, with teams divided by geography and time zones, information exchange becomes more difficult.

Asynchronous communications help businesses to overcome those complications and create a democratic approach to collaboration. Combining voice, chat, visual and data, they create a holistic communication tool that more accurately replicates in-person relationships. Chris Perrotti, VP of Digital Worklac at LogMeIn, recently explained that the power of these technologies lies in "providing people with the flexibility to take in information on their own terms" and leaving a "digital paper trail" to keep teams aligned and accountable.

Asynchronous communications can also help bridge the gap between senior and junior employees divided by the remote/office split, helping to reinstate that valuable flow of information and guidance from more experienced team members to those who need it. Larger businesses may need to go beyond basic, off the shelf platforms and create a more bespoke experience for their unique circumstances. Alternatively, they need to make sure that they are exploring the full functionality of the platforms they already have, and that all employees are using the technology correctly.

5G might start making its money. Or it might not.

Telcos have paid a "crazy" amount of money on 5G licenses, according to RPI's Stuart Wilson, but it's unlikely that we will see who the commercial winners and losers of the 5G frenzy are in 2022.

Now that the initial investment into 5G has been made, telcos will need to focus on commercial skills in-house that can help them to monetise the technology in the years ahead, particularly leveraging industrial and business-led applications that have a more immediate return. Private 5G, for instance, can be used to power automations and robotic processes for businesses without relying on widespread 5G coverage.

For end users, the low-latency and high-speed data transfer of 5G will present an opportunity to explore more flexible automations, IoT and digital processes in 2022, particularly in manufacturing and heavy industry. 74% of manufacturers plan to adopt Private 5G by 2024, as they seek to secure the technology's competitive advantage without waiting for full public coverage.

74%

of manufacturers plan to adopt Private 5G by 2024

Data mesh makes information more accessible.

"It's not just the volume of data that's increasing, but its sources and uses within an organisation"

Data mesh is a new approach to designing and developing data architecture – one that decentralises data to make it faster and easy to access. Like other technologies on this list, it's both modular and connected, making it an agile data management option.

Unlike a data lake, which pools data into one physical location, data mesh connects – or meshes – data sources together. It allows everyone from business users to data scientists to access, analyse and use data from any source that's part of the mesh.

Data mesh recognises that it's not just the volume of data that's increasing, but its sources and uses within an organisation. While most master data management platforms seek to create a single source of data, data mesh accounts for many sources of data, but strings them together so that everyone has access to them. It distributes ownership to the teams that manage and own that data, helping to improve data quality and transparency as a result.

How to win in the digital age: the tech talent battleground in 2022.

In 2020, McKinsey identified the seven technology talent 'battlegrounds' that would make or break businesses over the next five years, saying that "winning in the data and digital age depends on talent that creates tech – not just adopts it."

1. DevOps
2. Customer EX
3. Cloud
4. Automation
5. Platform & product
6. Data management
7. Cyber security

At RPI, we're still seeing stiff competition in these areas today, as businesses across sectors and geographies look to secure their digital futures and gain the flexibility they need to survive and thrive through disruption.

"The demand for talent has gone ballistic in 2021," comments Wilson, "and every candidate who is actively looking has a choice of offers and is receiving competitive counteroffers on salary. It's very much a candidate's market at the moment." For businesses looking to secure the skills they need, a move to exclusive retained search can provide a better strategy for accessing the right talent: essentially head hunting for the right roles, as opposed to dipping into the pool of job seekers.

A global, cross-sector approach to talent is also becoming vital, as businesses in every market around the world seek to develop the latest technology and communications solutions based on customer demands. While twenty years ago businesses would be looking to competitors in their sectors to hire the best candidates, now a broader, more fluid approach is needed – with retailers, for instance, looking to FinTech professionals to fulfil their online payment demands.

However, as Wilson commented, it's not just delivery talent that is needed to drive business' digital future. Enterprises need the right leadership, with experience and understanding of the relationship between technology and commercial goals, to make the right strategic investments.

RPI has been at the cutting edge of technology talent acquisition since our launch in 1998. We've placed over 9,058 leadership and technology placements across 120 countries, thanks to our unique combination of local expertise, global reach and extensive candidate network.

If you need a trusted partner to deliver the best talent to secure your business' growth in 2022, contact your local RPI team.

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