2023 Emerging Technology Survey

The state of emerging tech today — and 4 practices that grow the top and bottom lines

November 2023

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About the survey

PwC's 2023 Emerging Technology Survey

Our latest [report](#) is designed to help executives answer their biggest questions around emerging technologies. The results, along with our first-hand experience within PwC and with clients, can help you make the most of these technologies: how to develop a strategy, execute effectively and grow trust with stakeholders every step of the way toward delivering positive business outcomes.

Between August 16, 2023, and September 13, 2023, PwC surveyed 1,026 executives in the United States:

- 46% in business roles, 54% in technology roles on topics related to emerging technologies.

- Organizations from public & private sectors

- Industry split:

  – Financial services (19%);

  – Industrial products (17%);

  – Consumer markets (18%);

  – Health (11%);

  – Energy, utilities and resources (9.5%);

  – Technology, media and telecommunications (20%)

How do you avoid falling for hype or falling behind?

Timing is everything — especially if you're a business leader considering emerging technology investments.

AI, blockchain, virtual reality, even quantum computing and the rest of the Essential Eight can drive business growth. But without the right approach, they can result in wasted investments, shareholder frustration and uncertain futures for the executive champion.

Our survey shows that a few companies — very few — are getting these technologies right. Executives in these organizations report significantly higher benefits from emerging tech in general, and from generative AI (GenAI) in particular, than their peers. With the help of tech-specific governance and of workforce transformations, many are even using emerging tech to build trust with stakeholders.

We call these companies — 7% of respondents in our survey — EmTech Accelerators.

To identify the EmTech Accelerators, we designed two indexes to capture how much companies are already achieving measurable value from tech-related investments. One index covered all of the Essential Eight technologies. The other focused on GenAI specifically. EmTech Accelerators were those that reached the top 10% of both the broader and the GenAI-specific indexes. Data analysis then found common traits in how these companies approach emerging technologies.

Key findings

89% of executives

said their companies are increasing their overall technology budget, which may be used to fund emerging tech initiatives.

7% of respondents are getting emerging technologies right

— reporting significantly higher benefits from emerging tech in general, and from generative AI.

74% of EmTech Accelerators

use emerging technology to expand into new markets.

72% of EmTech Accelerators strongly agree

their company's emerging technology strategy is integrated with their business strategy.

Report **higher levels of integration** across the emerging technologies their company has or plans to invest in.

They are **more likely** to be training their employees on emerging technologies.

Four lessons from EmTech Accelerators

Our index revealed **only 7%** of respondents already achieving measurable value from their tech-related investments. So what's the secret to their success?

Here are **four practices** that likely explain EmTech Accelerators' outperformance.

1. Use emerging tech for reinvention

2. Allocate the right resources

3. Integrate your EmTech

4. Embed emerging tech into your business strategy
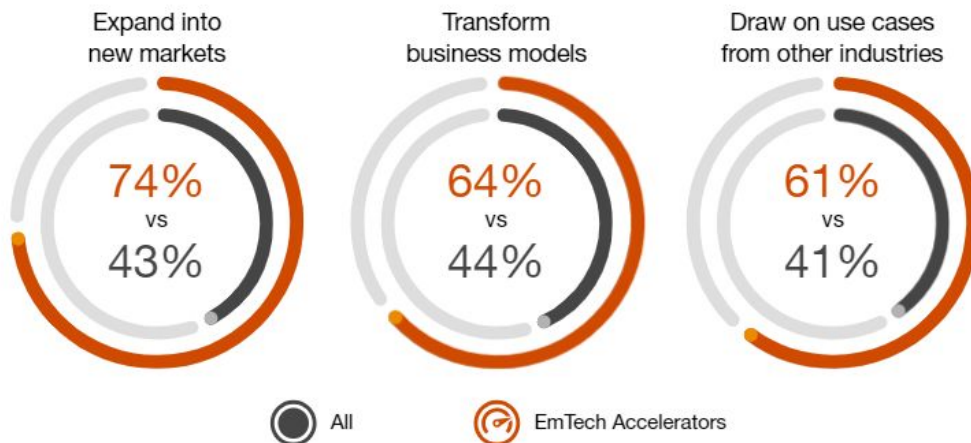
Think big: Use emerging tech for reinvention

What they do

- These companies often look outside their industry for use cases to adopt and then adapt to create new customer experiences, differentiated employee experiences, and growth strategies for their specific marketplaces and lines of business.

- The time has come to see what works to deliver the outcomes you seek, then roll out applications at scale. And — to take a lesson from the EmTech Accelerators — it can be advantageous not just to aim for operational efficiencies. Aim for new operations.

Where to start

- **Learn from proven use cases to help drive outcomes.** Emerging technologies can be powerful and can benefit greatly from scale.

- **Design for trust.** To transform your organization with emerging tech, stakeholder trust is vital. Trust by design is almost always faster and more cost-effective than having to close gaps and reverse engineer systems later on.

- **Empower your people.** Skills and policies are just the start. It's important to foster an entrepreneurial mindset among your employees.

Accelerators and the rest: how ambitions differ

Expand into new markets	Transform business models	Draw on use cases from other industries
74% vs 43%	64% vs 44%	61% vs 41%

● All   ◉ EmTech Accelerators

Note: Showing 3 responses from a list of 13 options.
Q: To what extent has your company used emerging technologies in the following areas? (Response to 'Currently do this')
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72

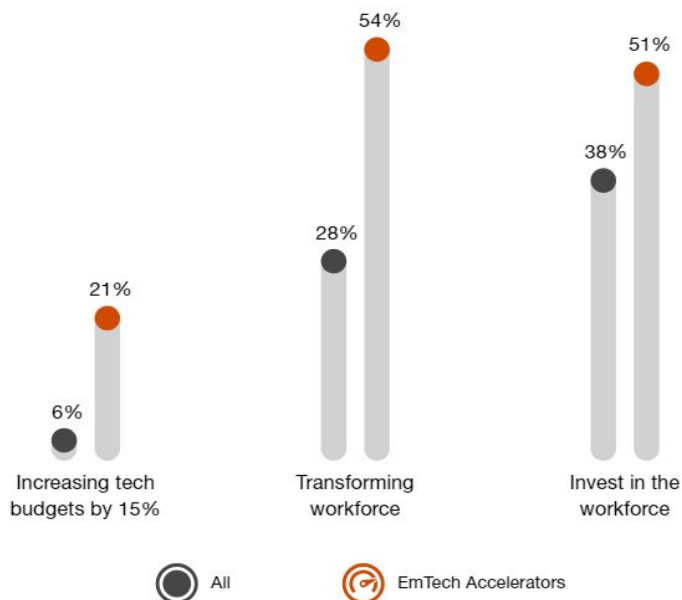# Commit to it: Allocate the right resources

What they do

- EmTech Accelerators are far more likely than others in our survey to invest more financial and human capital in emerging technologies — and they're doing so shrewdly. Many are also working to instill a culture of innovation.

- EmTech Accelerators are also more likely to say it's very important for their workforce to be adaptable and flexible (76% versus 57%) and to have collaborative skills (79% versus 55%).

Where to start

- **Innovative solutions to the talent gap.** For many of the Essential Eight technologies, there aren't nearly enough specialists to meet demand. Instead of competing for scarce talent, consider cross-skilling. Look for people with "adjacent" skills that could be enhanced.

- **Transform culture.** Emerging tech benefits greatly from new kinds of innovation and collaboration — such as employees blending their specialties into enterprise solutions.

- **Follow the data.** To help improve investments in emerging technologies, create monitoring mechanisms to provide data on progress and help identify possible gaps.

Increasing budgets, transforming workforces

Increasing tech budgets by 15%: All 6%, EmTech Accelerators 21%

Transforming workforce: All 28%, EmTech Accelerators 54%

Invest in the workforce: All 38%, EmTech Accelerators 51%

● All   ◉ EmTech Accelerators

Q: How is your company's overall technology budget changing in the next 12 months? (Select one)
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72
Q: What percentage of the employees in your company have been involved in developing, launching, adopting and/or commercializing emerging technologies as a part of their primary job function? (Select one)
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72
Q: Which, if any, of the following actions is your company taking to deploy emerging technology solutions that are trusted by your stakeholders?
(e.g., consumers, employees, investors) (Select all that apply)
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72

# Think convergence: Integrate your EmTech

What they do

- Emerging technologies play well together. Over four fifths of EmTech Accelerators understand the integration imperative. This integration may be helping them implement more of the Essential Eight technologies across more parts of the business, especially because of data.

- The more that these technologies work together, the more data you can gather and use. This data can lead to better-performing tech and better-supported decisions for greater ROI today and possibly even more valuable implementations tomorrow.

Where to start

- **Get people engaged.** Technologists often tend to work in silos unless you make it easy and rewarding for them to communicate.

- **Set accountability.** To help teams collaborate, make someone responsible for making that happen.

- **Make GenAI your interface.** GenAI can be for other tech what your smartphone is for many applications — an accessible way to use advanced technologies, even if they're not your specialty.

Bringing more tech together, in more areas of the business
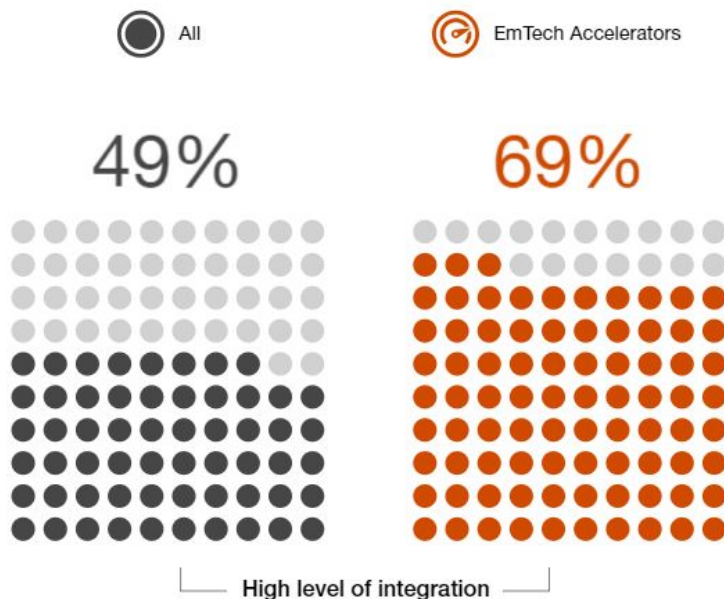
All — 49%

EmTech Accelerators — 69%

High level of integration

Q: Which of the following best describes the level of integration across the emerging technologies that your company has already invested in or is planning to invest in? (Response to 'High level of integration')
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72

# Think integration: Embed emerging tech into your business strategy

What they do

- Only when emerging technologies are part of your business strategy can they fulfill their full potential. On their own, your technologists may not know or understand the products, services and experiences that your customers and employees need and desire.

- It's your business and functional leads who have this information. When business leads and technologists collaborate — and align with existing tech systems and other transformation initiatives — they can transform both customer-facing and internal operations.

Where to start

- **Integrate teams.** Business and technology leads should be constantly considering short- and long-term plans together.

- **Connect the technology dots.** Consider how emerging technologies can better align with other key technologies you use.

- **Look for scale.** EmTech won't move the needle for your business if it's just in the lab.

Deliver more value by bringing together tech and business
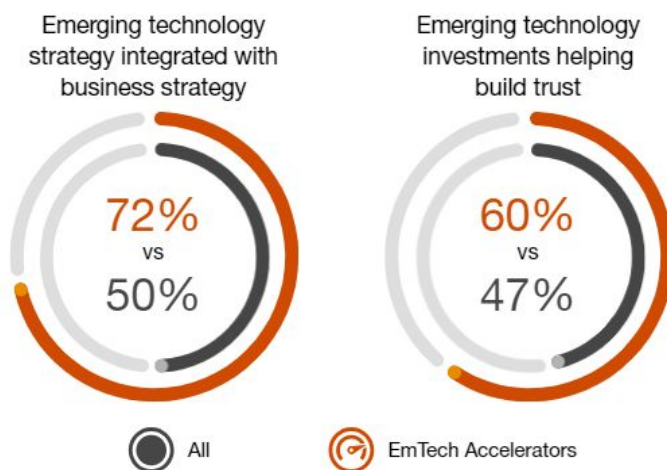
Emerging technology strategy integrated with business strategy

72%
vs
50%

Emerging technology investments helping build trust

60%
vs
47%

⬤ All   🔘 EmTech Accelerators

Q: To what extent do you agree or disagree with the following statements? (Response to 'Strongly agree')
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72
Q. How much do you agree or disagree with the following two statements? (Response to 'Strongly agree'):
My company's emerging technology strategy is integrated with our business strategy. Our investments in emerging technologies are helping us build trust with our stakeholders.
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72
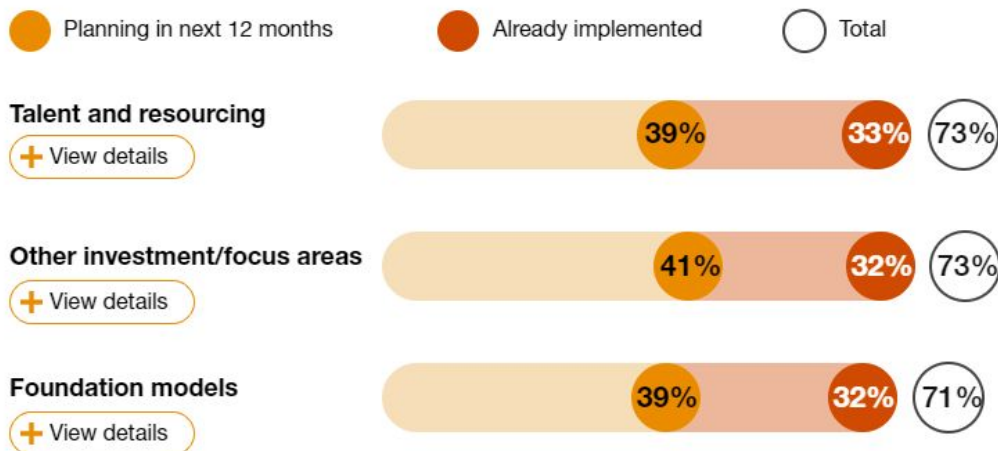
A spotlight on GenAI
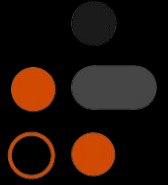
What they do

- It's not just EmTech Accelerators pushing GenAI deployment. For all GenAI-related activities in our survey, more than two thirds of all respondents report that implementation is either already in progress or planned for the next 12 months.

- EmTech Accelerators still stand apart. They're more likely than other respondents to have already implemented GenAI to some extent (88% versus 54%), already implemented more GenAI related activities (7 versus 4), already implemented governance around responsible GenAI (65% versus 33%) and already implemented data modernization to take advantage of GenAI (57% versus 30%).

Where to start

- **Start with trust.** Trust and risk management are especially important for GenAI since it's so accessible to everyone.

- **Don't fall into the use-case trap.** GenAI can deliver ROI quickly — but not through isolated use cases. Look instead for how a single "pattern" of GenAI training can deliver value across your organization.

- **Be tech-powered but human-led.** GenAI can help your people be more productive and make better decisions — but it shouldn't replace them.

Actions underway to deploy GenAI—now and soon

Legend: ● Planning in next 12 months ● Already implemented ○ Total

Activity	Planning in next 12 months	Already implemented	Total
Talent and resourcing (+ View details)	39%	33%	73%
Other investment/focus areas (+ View details)	41%	32%	73%
Foundation models (+ View details)	39%	32%	71%

Q: Which, if any, of the following GenAI related activities is your company implementing or planning to implement?
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026

Thank you

Contact

Scott Likens
Global AI and Innovation
Technology Leader
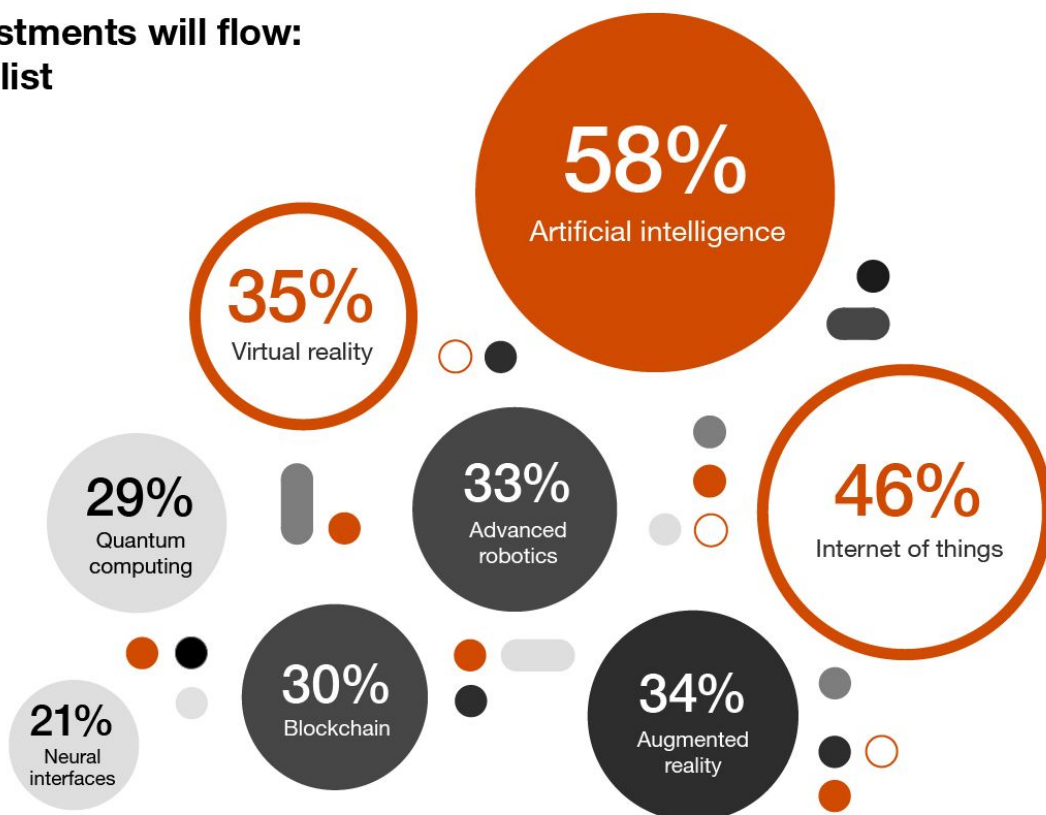scott.likens@pwc.com

Emmanuelle Rivet
Vice Chair, US TMT & Global
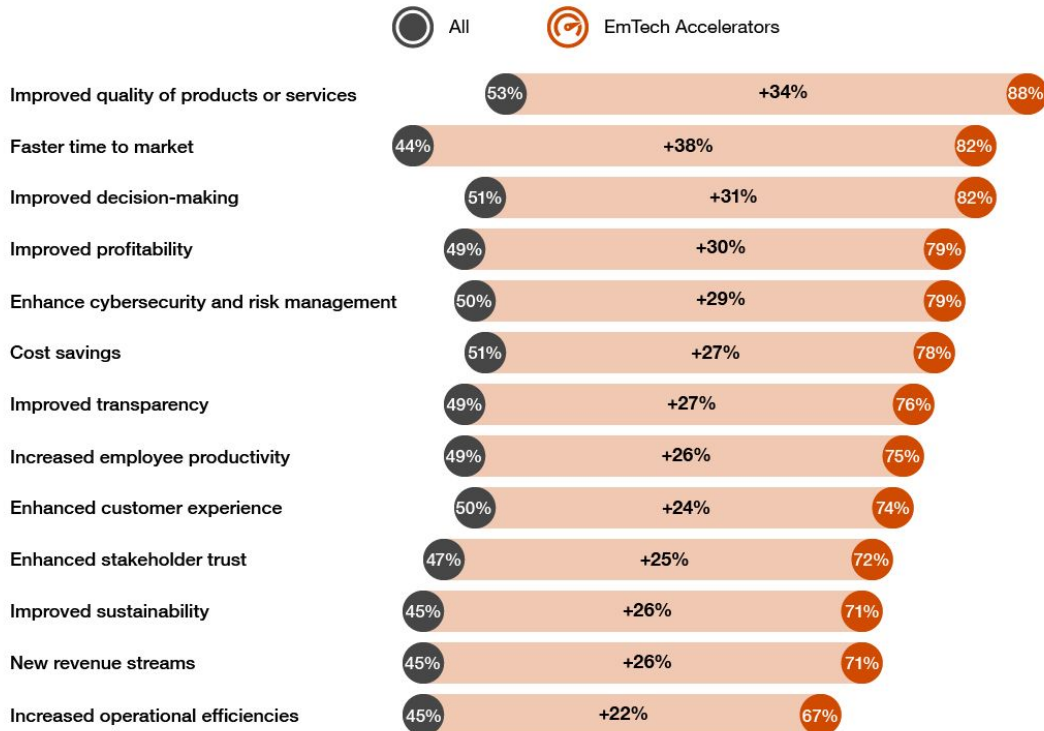Technology Leader
emmanuelle.s.rivet@pwc.com

Additional charts available, if needed. Please delete before downloading and sharing externally.

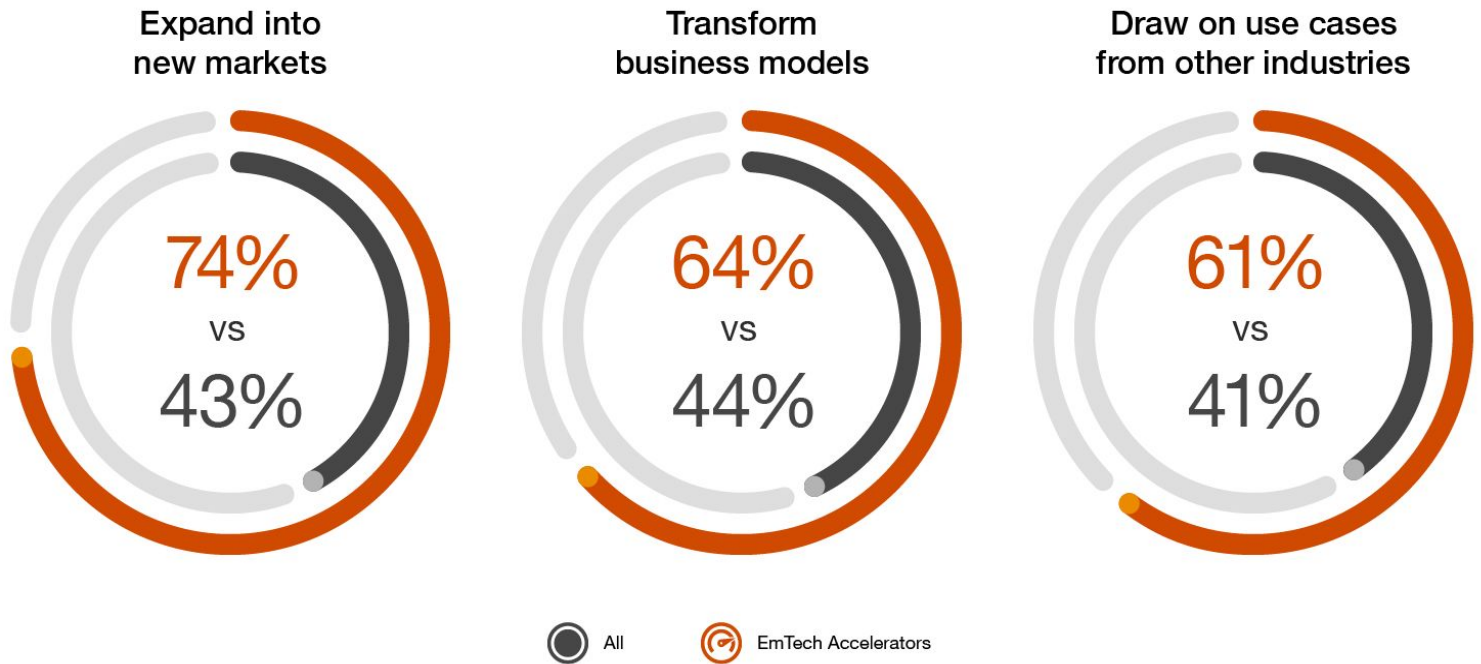**Where investments will flow:
AI tops the list**

Q. Where does your company plan to prioritize investment in emerging technology over the next 12 months? (*Ranked in top 3*)
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026

Accelerators achieve much higher benefits — especially for the business

● All   ◉ EmTech Accelerators

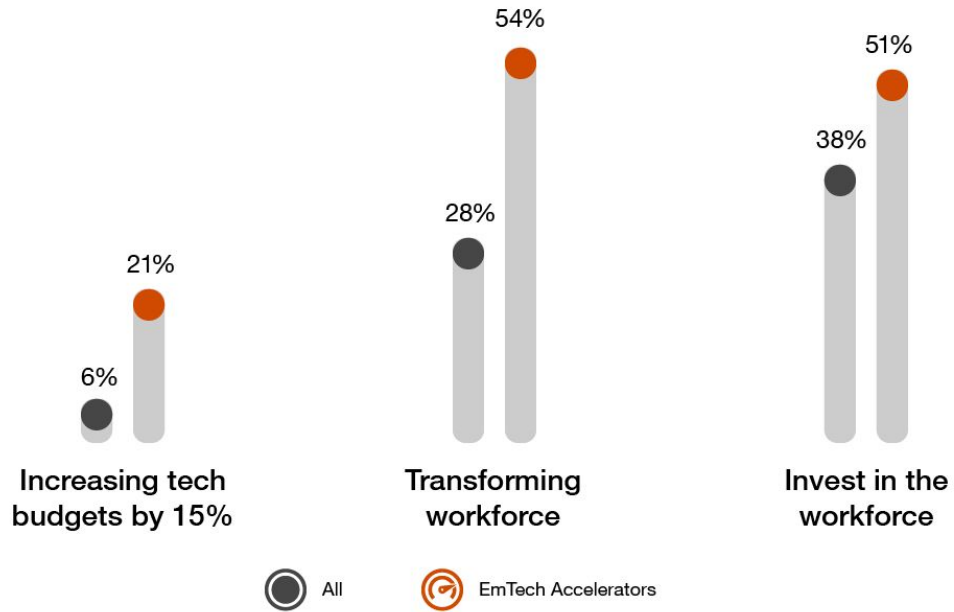| Benefit	All	Difference	EmTech Accelerators
Improved quality of products or services	53%	+34%	88%
Faster time to market	44%	+38%	82%
Improved decision-making	51%	+31%	82%
Improved profitability	49%	+30%	79%
Enhance cybersecurity and risk management	50%	+29%	79%
Cost savings	51%	+27%	78%
Improved transparency	49%	+27%	76%
Increased employee productivity	49%	+26%	75%
Enhanced customer experience	50%	+24%	74%
Enhanced stakeholder trust	47%	+25%	72%
Improved sustainability	45%	+26%	71%
New revenue streams	45%	+26%	71%
Increased operational efficiencies	45%	+22%	67%

The percentage point indicates the difference between both groups. Q: Which, if any, of the following benefits has your company achieved or expects to achieve from the use of emerging technologies? (Response to 'Already achieved measurable value')
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72

Accelerators and the rest: how ambitions differ

Expand into new markets

74%
vs
43%

Transform business models

64%
vs
44%

Draw on use cases from other industries

61%
vs
41%

All   EmTech Accelerators

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Increasing budgets, transforming workforces

	All	EmTech Accelerators
Increasing tech budgets by 15%	6%	21%
Transforming workforce	28%	54%
Invest in the workforce	38%	51%

⬤ All   ⬤ EmTech Accelerators

Bringing more tech together, in more areas of the business

⬤ All   ◎ EmTech Accelerators

**58%**   **83%**

High level of integration

Q: Which of the following best describes the level of integration across the emerging technologies that your company has already invested in or is planning to invest in?
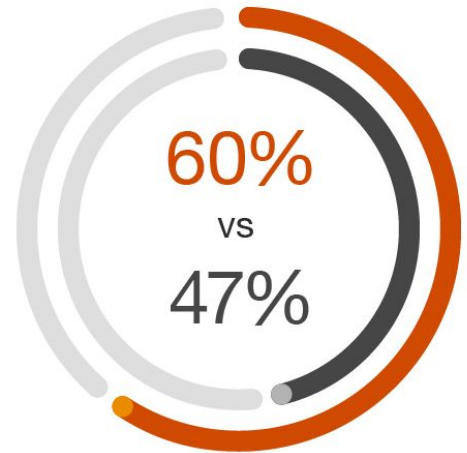(*Response to 'High level of integration'*)
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Bringing together tech and the business to deliver more value

Emerging technology strategy integrated with business strategy
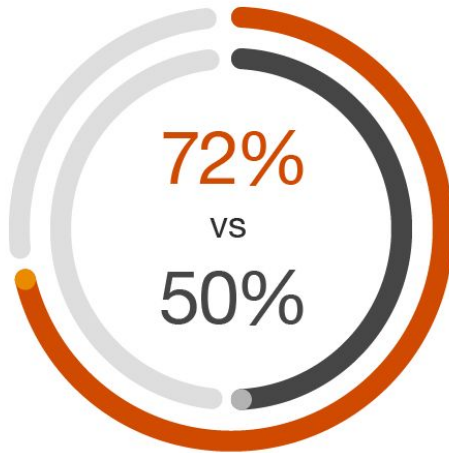
72%
vs
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Emerging technology investments helping build trust

60%
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All   EmTech Accelerators

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Q. How much do you agree or disagree with the following two statements? (*Response to 'Strongly agree'*): My company's emerging technology strategy is integrated with our business strategy. Our investments in emerging technologies are helping us build trust with our stakeholders.
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026, accelerator base of 72

Actions underway to deploy GenAI—now and soon

● Planning in next 12 months   ● Already implemented   ○ Total

Talent and resourcing   39%   33%   73%

Other investment/focus areas   41%   32%   74%

Foundation models   39%   32%   71%

Q: Which, if any, of the following GenAI related activities is your company implementing or planning to implement?
Source: PwC's 2023 Emerging Technology Survey, November 30, 2023: base of 1,026

Actions underway to deploy GenAI—now and soon

● Planning in next 12 months   ● Already implemented   ○ Total

Talent and resourcing

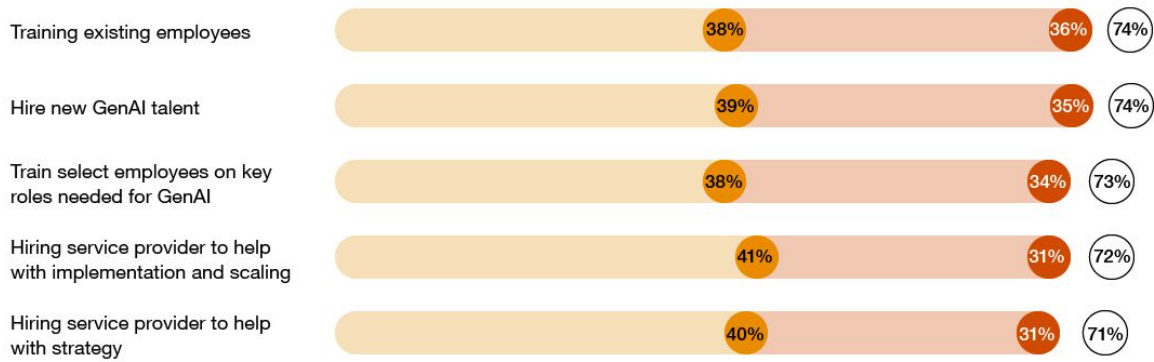|			
Training existing employees	38%	36%	74%
Hire new GenAI talent	39%	35%	74%
Train select employees on key roles needed for GenAI	38%	34%	73%
Hiring service provider to help with implementation and scaling	41%	31%	72%
Hiring service provider to help with strategy	40%	31%	71%

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Other investment/focus areas

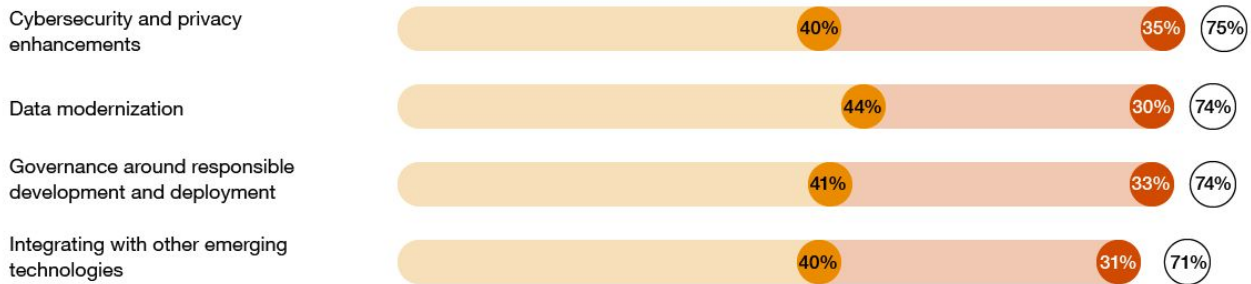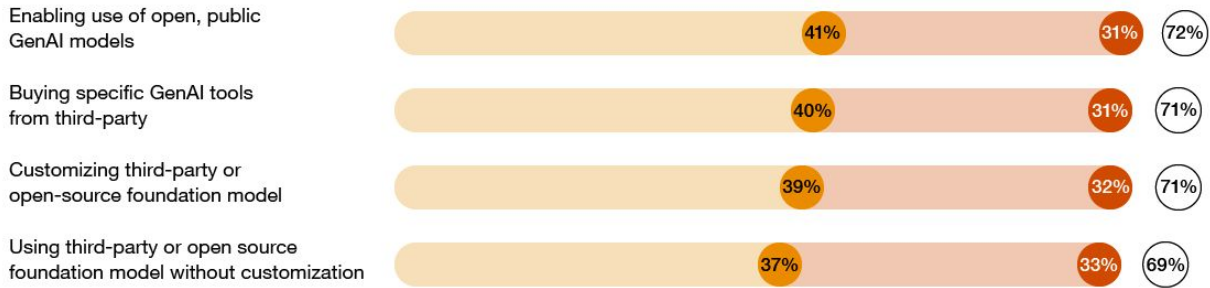|			
Cybersecurity and privacy enhancements	40%	35%	75%
Data modernization	44%	30%	74%
Governance around responsible development and deployment	41%	33%	74%
Integrating with other emerging technologies	40%	31%	71%

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Actions underway to deploy GenAI—now and soon

● Planning in next 12 months   ● Already implemented   ○ Total

Foundation models

Enabling use of open, public GenAI models — **41%**   **31%**   (72%)

Buying specific GenAI tools from third-party — **40%**   **31%**   (71%)

Customizing third-party or open-source foundation model — **39%**   **32%**   (71%)

Using third-party or open source foundation model without customization — **37%**   **33%**   (69%)

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