

Resilience of the PLM Economy

2021 CIMdata PLM Market & Industry Forum

Resilience of the PLM Economy

PLM Market & Industry Forum

A CIMdata Leadership Event

15 April 2021

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Global Leaders in PLM Consulting
www.CIMdata.com

#plm4um

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Our Mission...

Strategic management consulting for competitive advantage in global markets

CIMdata is the leading independent global strategic management consulting and research authority focused exclusively on PLM and the digital transformation it enables.

We are dedicated to maximizing our clients' ability to design, deliver, and support innovative products and services through the application of PLM.

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Key Takeaways

Once again, the PLM Economy has shown its resilience in the face of crisis

- 2019 was a good year for the PLM Economy, which was poised for a strong 2020...then COVID-19 gripped the world
- Companies needed to determine how best to do business in this new environment, software and service providers scrambled to support them
- Work location, sales processes, and service delivery saw revised approaches, with many good results
- The PLM Economy helped get their customers up and running, and worked “side by side” with them during the crisis
- The “new normal” is bringing changes and new challenges for technologies and business practices



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Agenda

2021 CIMdata PLM Market & Industry Forum – Resilience of the PLM Economy

- Defining the PLM Economy
- Before the Pandemic
- During the Pandemic
- After the Pandemic: What Should the New Normal Be?
- Conclusion

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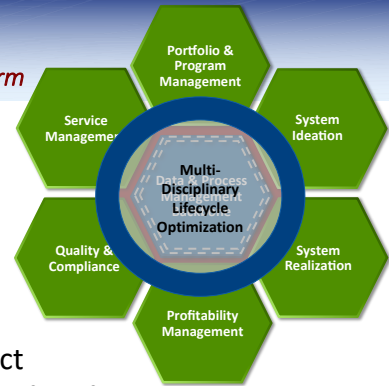
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PLM – CIMdata’s Definition

Digital transformation of the lifecycle—enabled by a product innovation platform

- Strategic business approach
 - **NOT** just technologies
 - Consistent set of business solutions
- Collaborative creation, use, management & dissemination of product related *intellectual assets*
 - All product/plant definition information – the virtual product
 - AEC, MCAD, EDA, ALM, SE, requirements, simulations, analytics, portfolio, formulas...
 - All product/plant process definitions – the virtual processes
 - Processes that plan, design, produce, operate, support, decommission, recycle...
- An innovation platform that supports the extended enterprise
- Spans the full lifecycle, from idea/concept through life



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Software & Services Power the PLM Economy

A sampling of CIMdata’s past and present PLM Success clients



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Investment Key to the PLM Economy

A sample of recent financial industry clients



GI PARTNERS



J.P.Morgan



LONGVIEW PARTNERS



BANK OF AMERICA



THOMABRAVO

SILVERLAKE

REDBURN

TEMASEK

generation



McKinsey & Company

CVC

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How Did the PLM Economy Respond?

Conducted a short (5 min) survey of global software and services companies in the PLM Economy

- Will be using charts from a survey of the global PLM Economy
- Two rounds of emails to thousands in the CIMdata CRM, promoted on LinkedIn, Twitter, Facebook
- Netted 50 usable responses (27 ISVs), thanks to those who responded
- Low number but their companies represent about 50% of global PLM revenues
- Reasonable geographic spread, close to 40-40-20 of global PLM spend
 - 42% EMEA, 38% Americas, 20% Asia-Pacific
- Will supplement this data with your responses to a few polls

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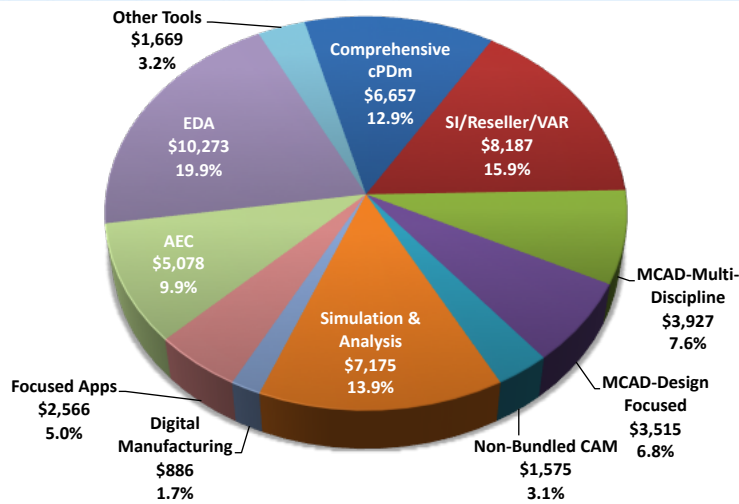
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CY 2019 PLM Investments by Segment

Market grew by 7.7% to US\$51.5 Billion in 2019, without COVID-19 CY2020 expected to be similar



Additional SI/Reseller/VAR Revenue is included within each Tools sector

Revenues presented are CIMdata estimates

Estimates are US\$ (Millions)

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Lifecycle Support for the Extended Enterprise

The PLM Economy preparing to virtually support global value chains for at least 20 years

- Revisit CIMdata’s PLM definition*:
 - An innovation platform to support the collaborative creation, use, management & dissemination of product-related intellectual assets
 - Across the extended enterprise and that spans the full lifecycle, from idea/concept through life
- Broadening and deepening of product innovation platforms, assets moving to leverage cloud-infrastructure over the last several years
- The PLM Economy has been preparing to power this type of virtual work environment for over 20 years

*With minor revisions



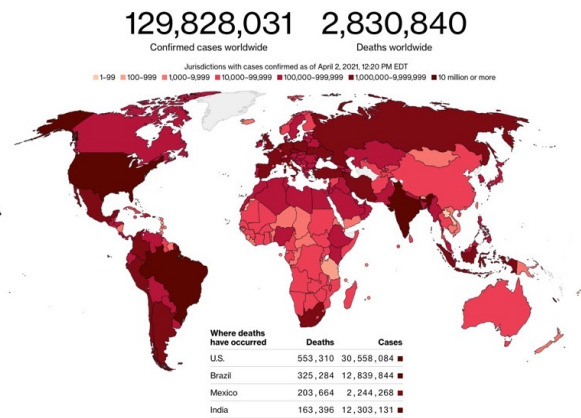
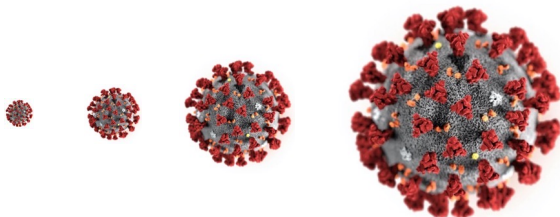
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The COVID-19 Pause

2019 was a strong year, expected more of the same in 2020 (and beyond), and then...

- 2019 was a good year for the PLM Economy – 7.7% growth YoY with an appetite for investment all around; Industry 4.0, smart connected, cloud
- 2020 guidance? Many letting “the good times roll”
- Until they didn’t...



Map: <https://www.bloomberg.com/graphics/2020-coronavirus-cases-world-map/>



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What Did We Say At Last Year's Forum?

And how did we do?

- Forecast assumed business would resume in the fall, regain strength through 2021
- Increase in subscription revenue would provide a backstop in some segments
- Some companies take advantage of turmoil to make difficult changes
- Would COVID-19 slow the growth in M&A in 2020?
- How will face-to-face consulting services have to change?
- How long will it take to get back to normal, or will there be a “new normal”?



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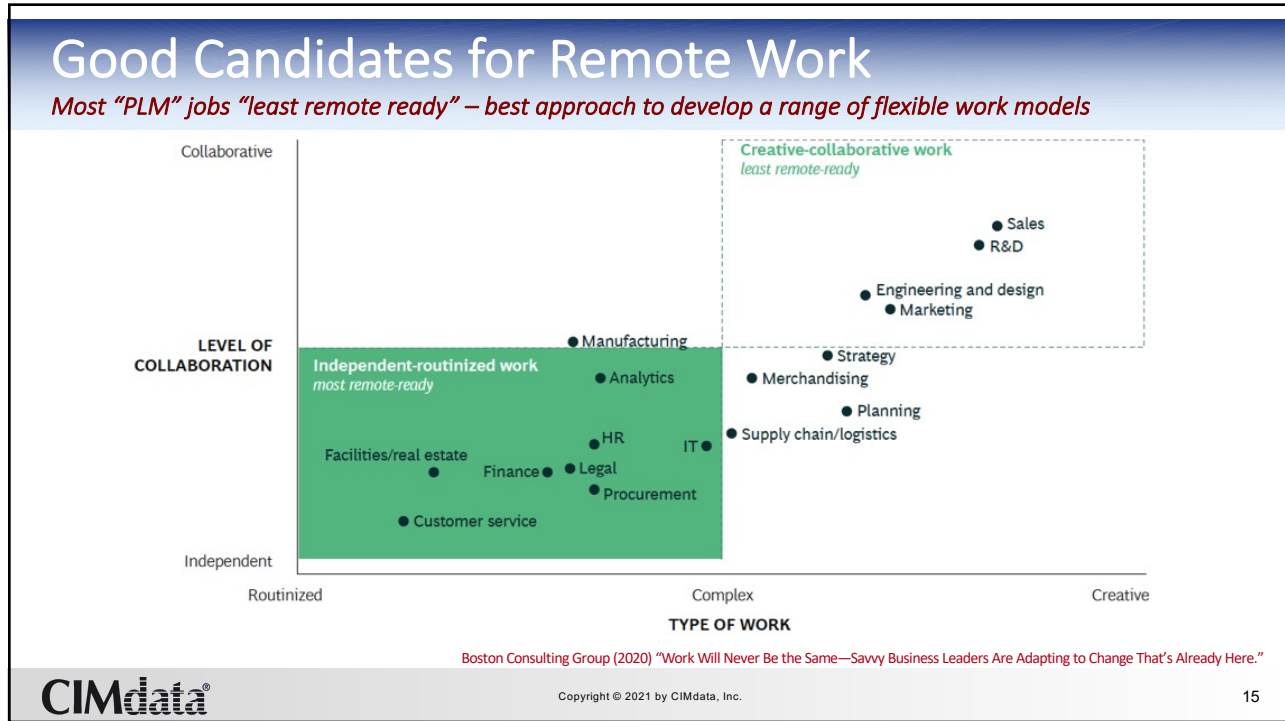
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Getting People Working

Think back a little over a year ago...

- Accessing needed hardware
- Managing access and security
- Making more software readily available
 - Many licensing changes, flexibility
 - Trial offers
- Enhanced access to training
- Greatly expanded use of collaboration, event platforms
- Scrambled to support customers remotely

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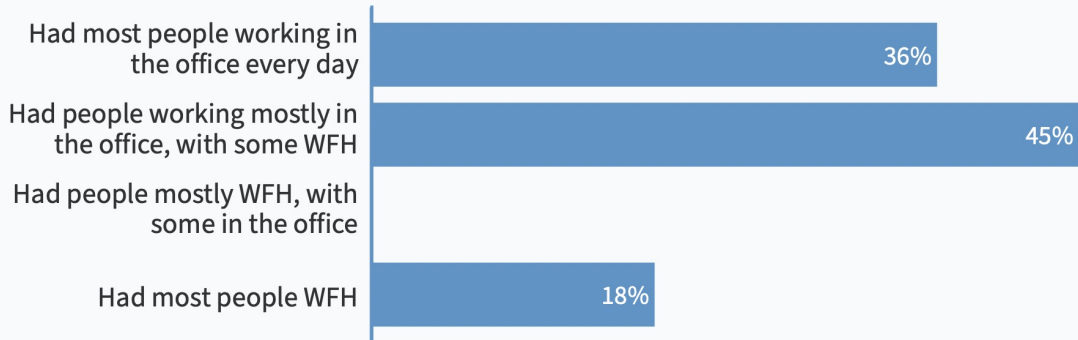
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PLM Foresight Poll

Prior to the pandemic, company policy:

Please choose the statement that best reflects the situation in your company. Prior to the pandemic, company policy:



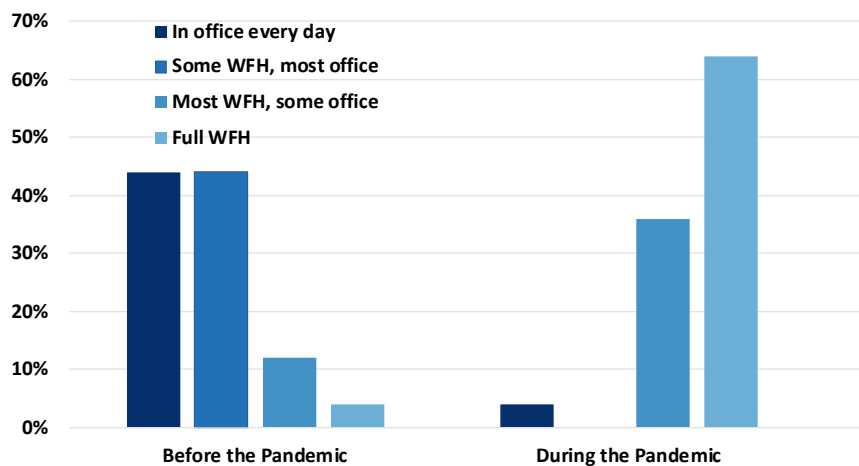
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Work Location

(Mostly) in the office to mostly out



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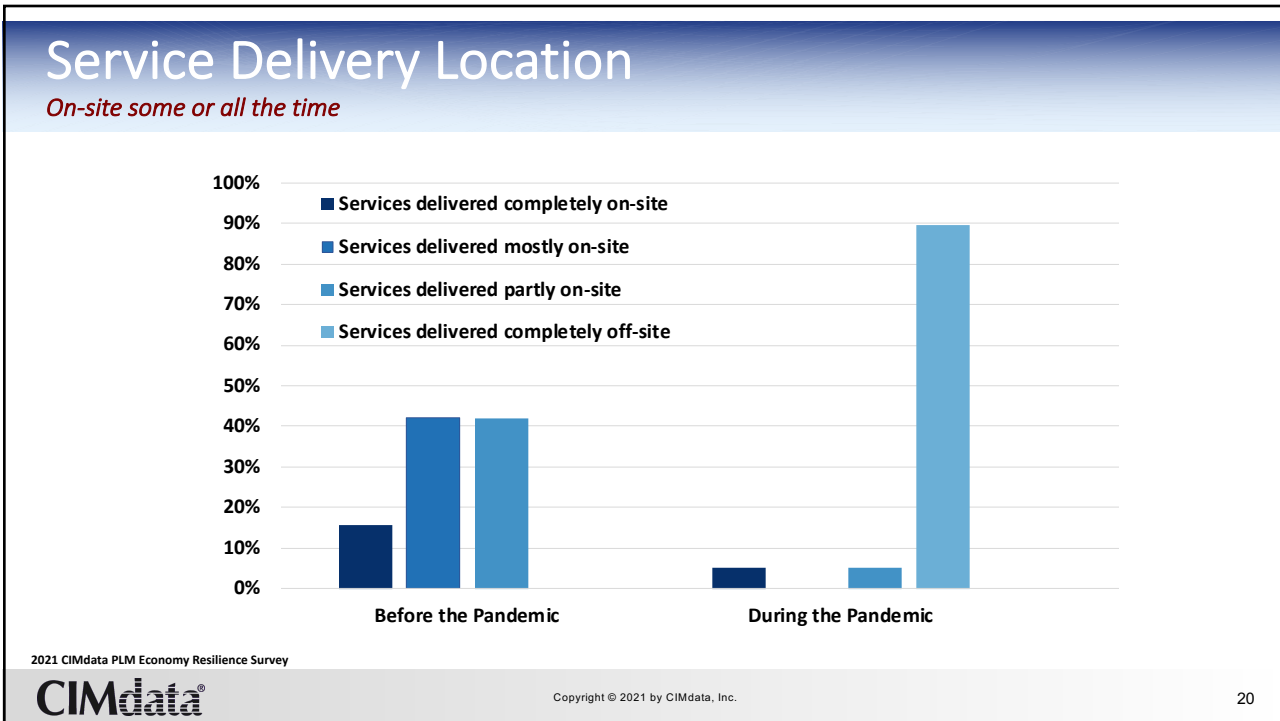
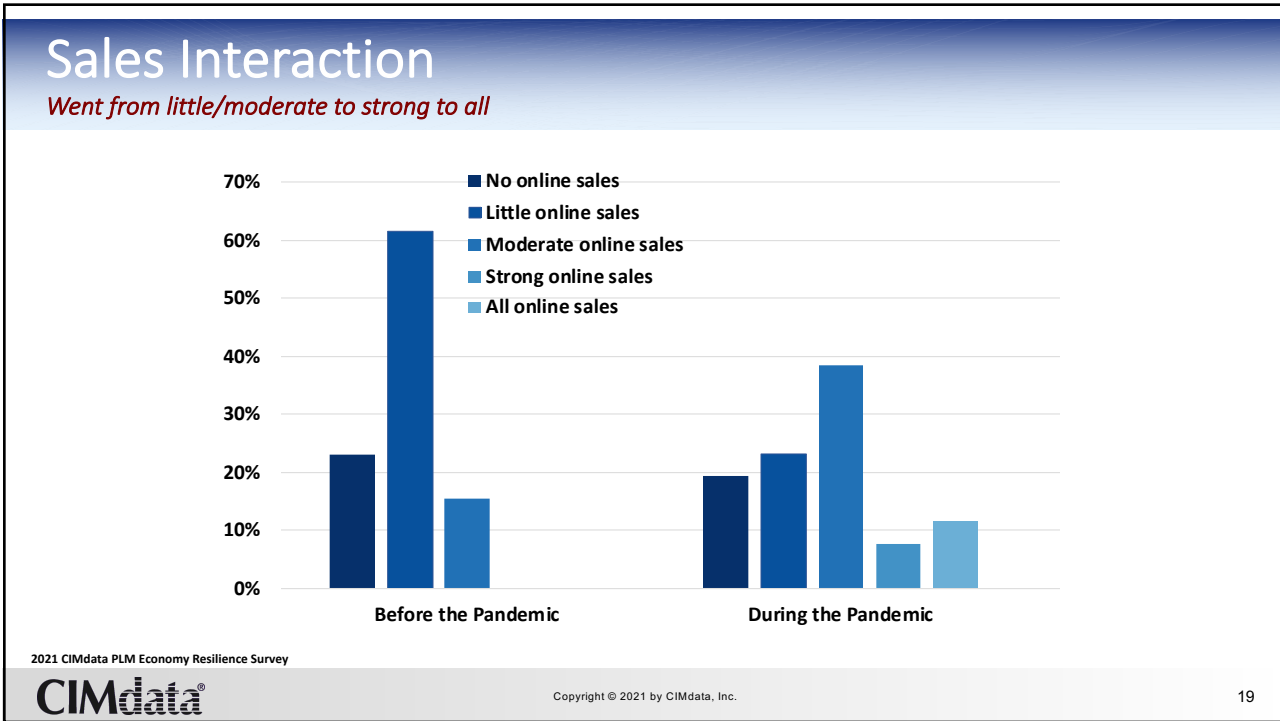
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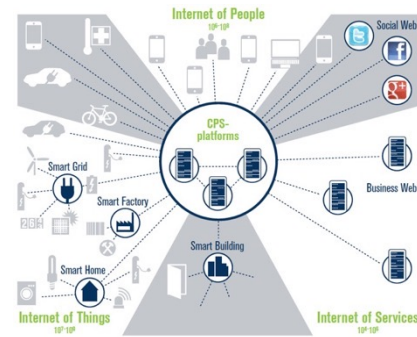
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The PLM Economy Joining the Fight

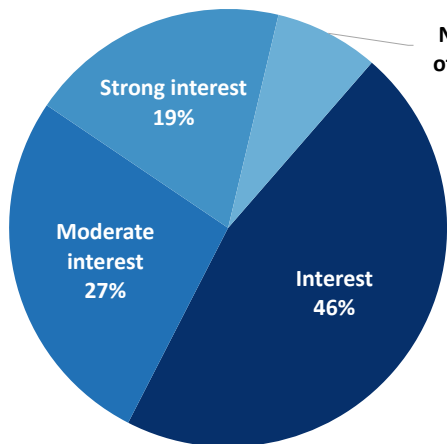
How software and services firms leveraged their skills and technologies to join the battle against COVID-19

- Programs for “Innovators,” “Makers” before the pandemic a natural fit
- Many critical needs, two stood out
 - Ventilator design/build challenges
 - Crowdsourcing PPE design, additive manufacturing (AM)
- Better understanding of a world with COVID-19
 - Rethinking workspaces, public spaces
 - How does COVID-19 move in the air? Computational Fluid Dynamics (CFD) to the rescue
- In our survey we asked about
 - New products, services
 - New licensing and packaging

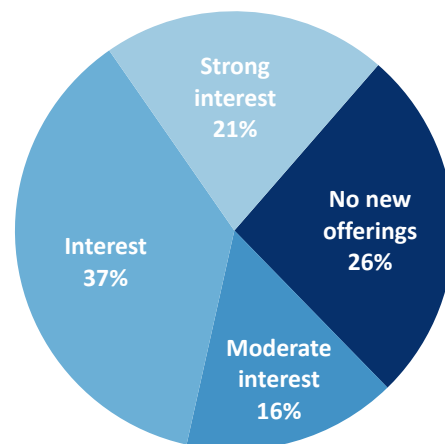


New Product & Service Offerings

Most created new offerings, with solid customer interest



ISVs



SI/Reseller/VAR

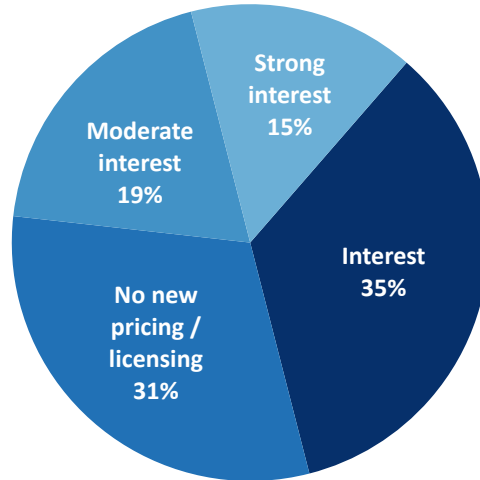
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New Pricing & Packaging Changes

ISVs revised pricing and packaging, with solid customer interest



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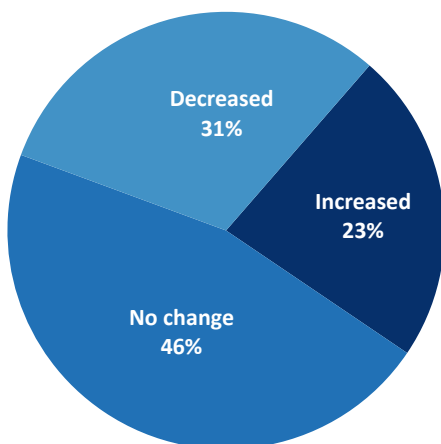
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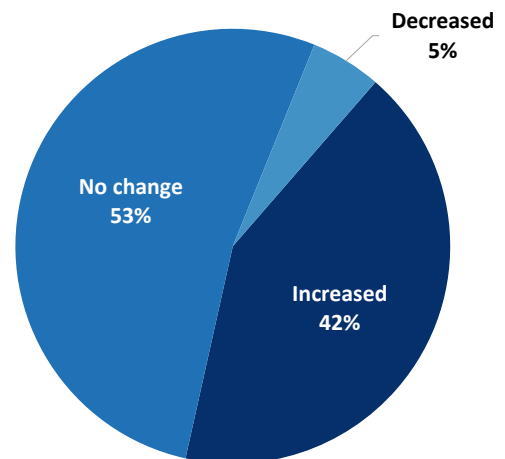
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Changes in IT Budgets?

Some increase in ISVs, large increase in SI/Reseller/VAR to support remote service delivery



ISVs



SI/Reseller/VAR

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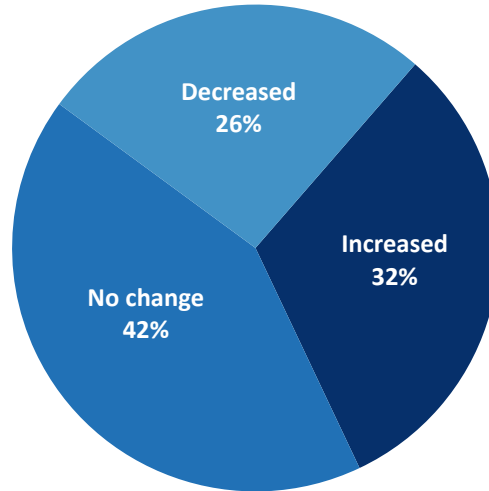
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Customer Changes in IT Budgets?

Less than a third of customers increased their budgets, some not letting the crisis go to waste



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That IT Investment Had a Downside

Two days at an event? Sure. More than two hours on Zoom? Can be torture...No social interaction!

A Neuropsychological Exploration of Zoom Fatigue

November 17, 2020

Jena Lee, MD



Relevant Topics ▾

What is Zoom fatigue and is there a biopsychosocial explanation for this COVID-inspired phenomenon? The answer might surprise—and comfort—you.

<https://www.psychiatrictimes.com/view/psychological-exploration-zoom-fatigue>

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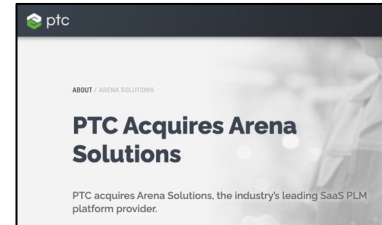
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Would COVID-19 Slow M&A in 2020?

More interest from the financial community, a range of firms and interaction types

- Going into the pandemic not clear if M&A would continue apace
- More (virtual) talks for institutional investors
- Inquiries about MAR reports and underlying data
- Inquiries from VC and PE firms
 - “Help us get smarter quickly”
 - “Help us build our case to invest (or not)”
 - “Support our due diligence efforts”
- Inquiries from (smaller) going concerns about finding investors



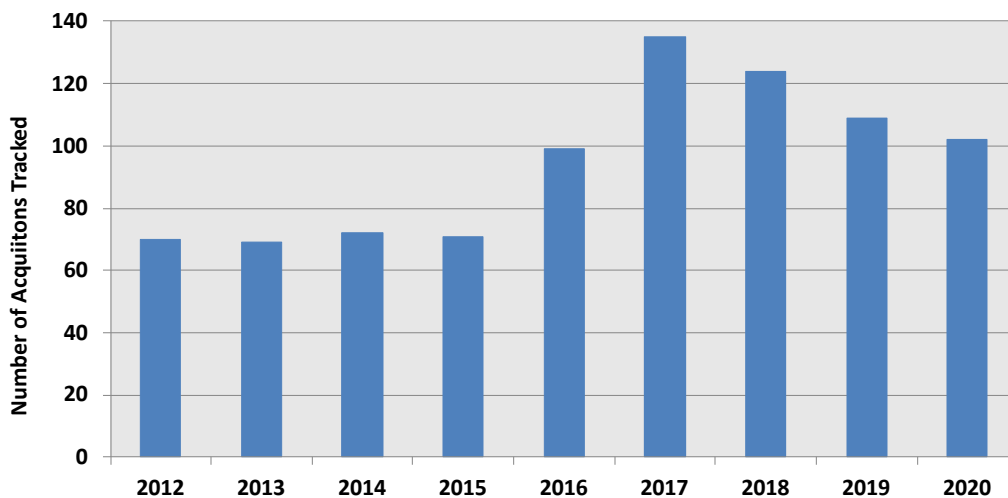
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Acquisitions Tracked by CIMdata

Not much change over 2019, the usual suspects active during the pandemic



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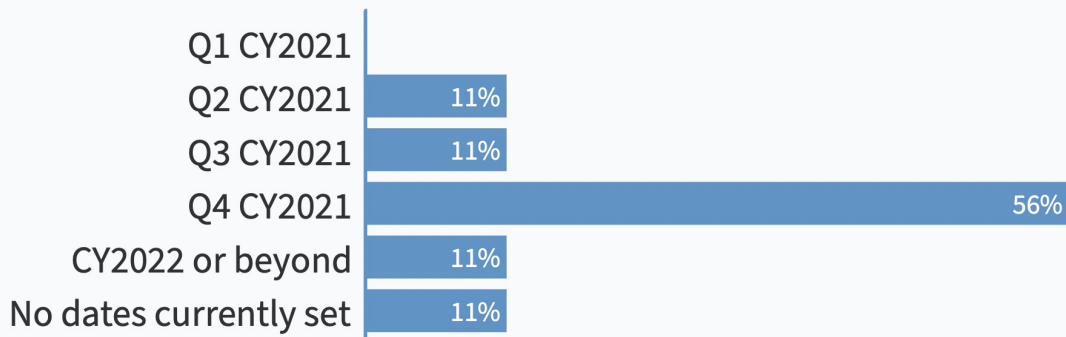
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PLM Foresight Poll

When will your company hold its next face-to-face customer or analyst event?

When will your company hold its next face-to-face customer or analyst event?



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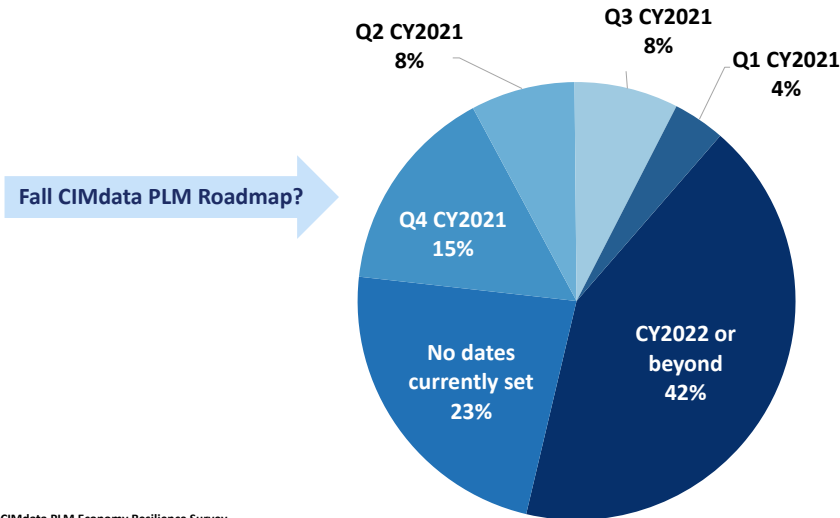
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Live Events?

The 2021 PLM Market & Industry Forum is virtual (again)...when will we see people face-to-face?



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The Future of Events

All virtual not enough, a place for hybrid events?

- Conferences and industry events a huge business before the pandemic
- More than \$1 Trillion spent annually on venues, catering, travel, hotels
- The event business was hard hit in previous downturns
 - The PLM event business changed permanently after the 2001 recession
 - Great Recession more Vee shaped
- Will this pandemic, and future threats, kill in-person events?
- All virtual can be part of the promotion mix, but can't replace in-person
- Hybrid events an interesting model
 - Part in-person, part online
 - Multiple smaller in-person regional events networked for some of the agenda

<https://www.washingtonpost.com/business/2021/03/05/mwc-barcelona-2021-comeback/>

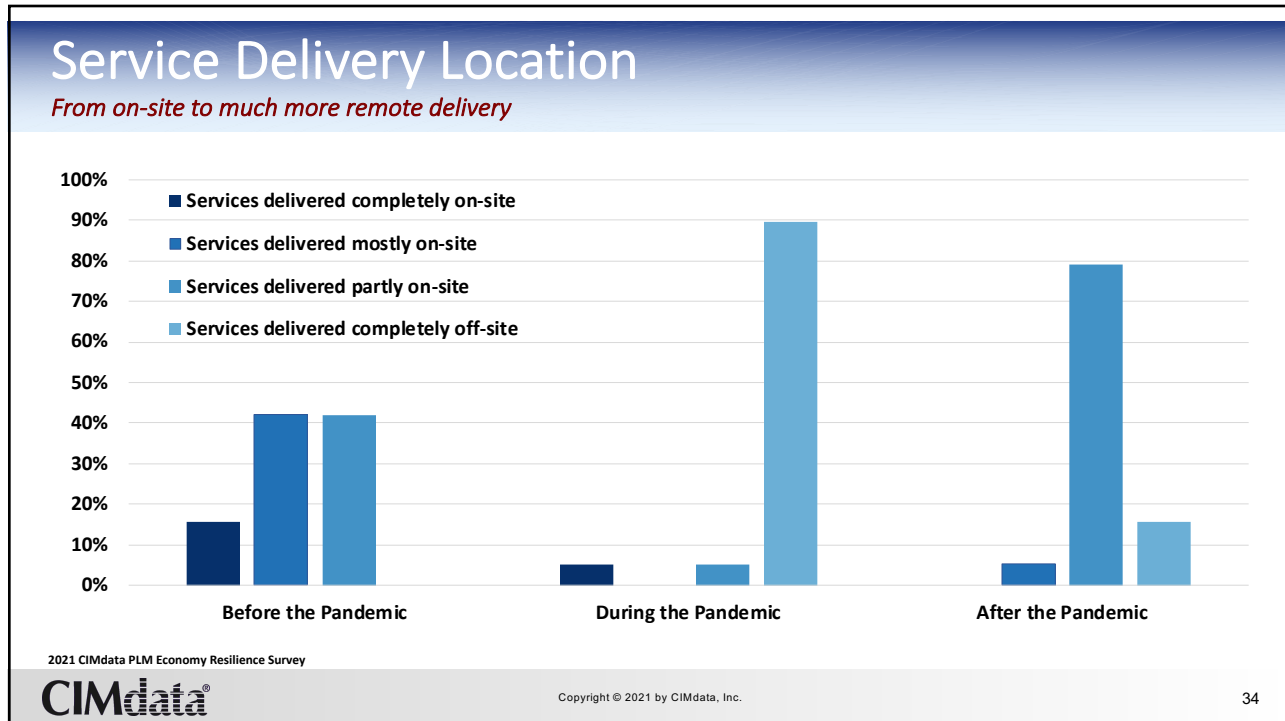
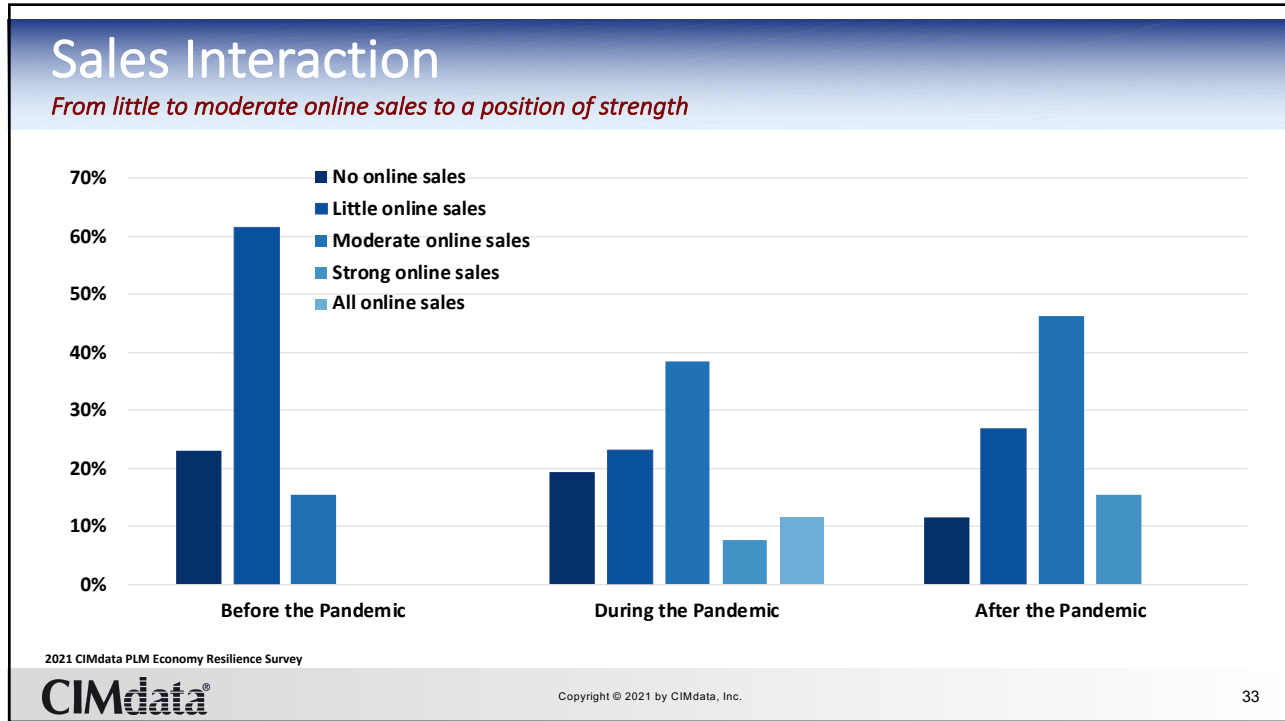
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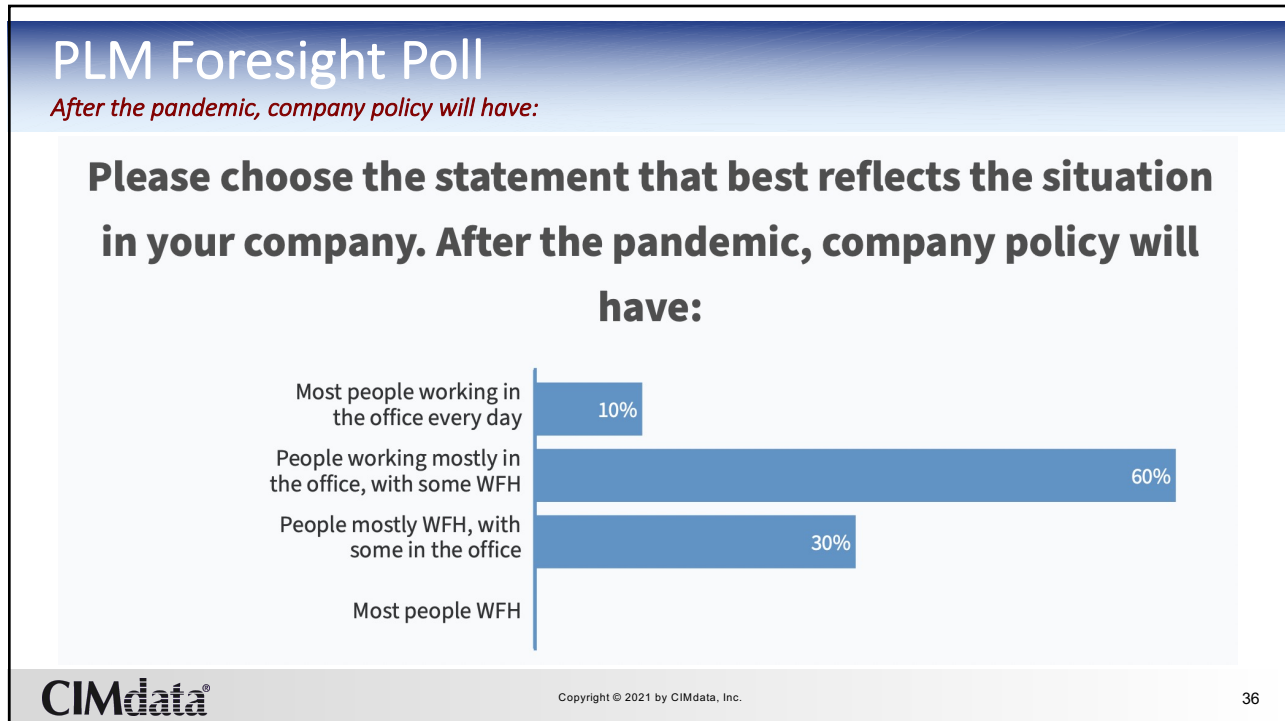
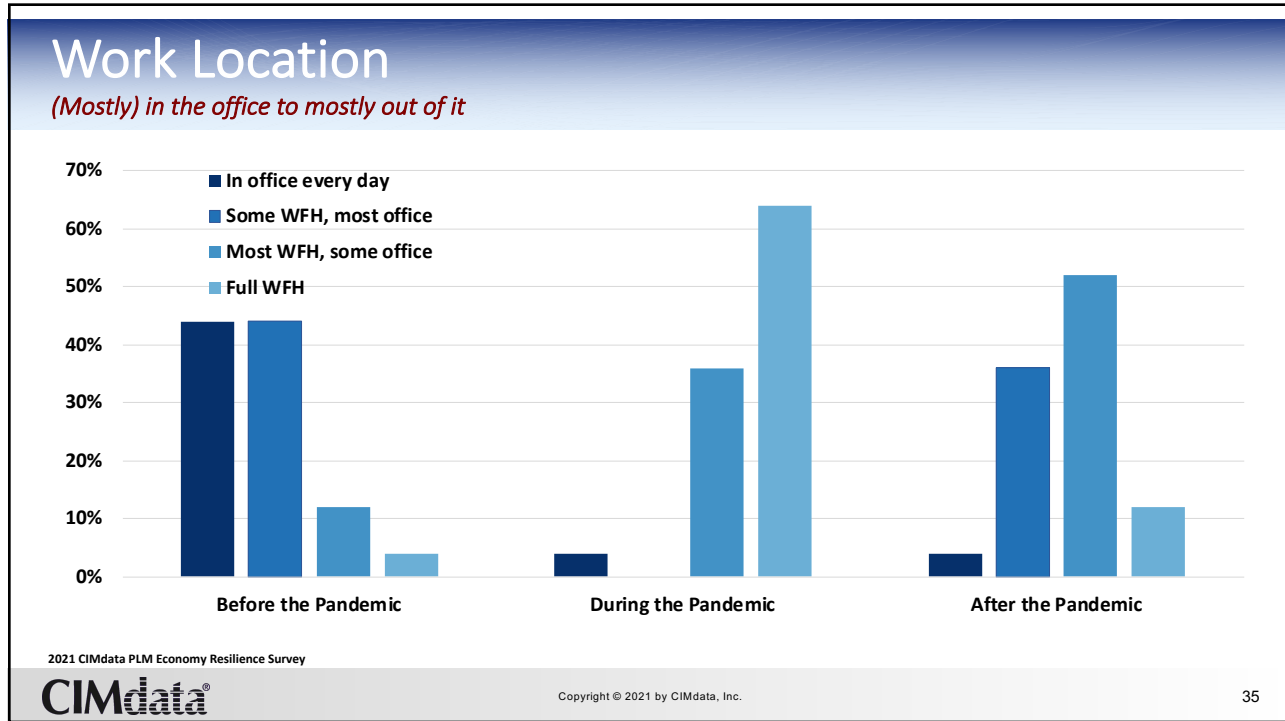
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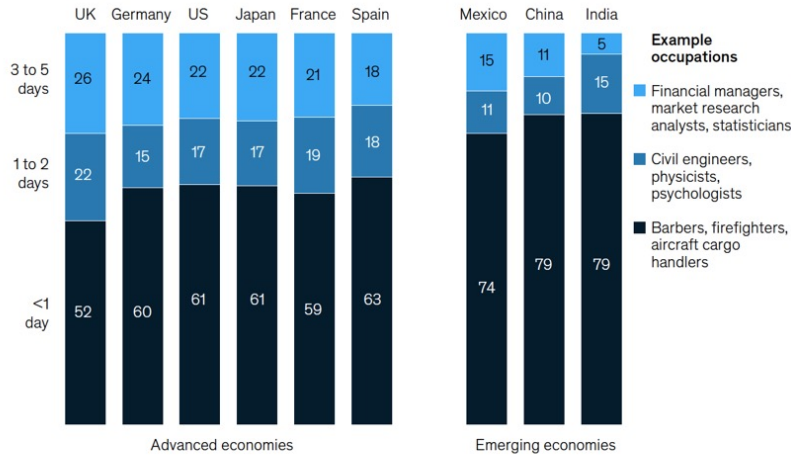


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What Should the New Normal Be?

McKinsey study of remote-work potential, "guesstimated" no productivity loss tasks



Note: Figures may not sum to 100%, because of rounding.
 *The effective potential includes only those activities that can be done remotely without losing effectiveness. Model based on more than 2,000 activities across more than 800 occupations.
 Source: McKinsey Global Institute analysis

McKinsey Global Institute (2021) "What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries."



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Designing the Future of Work

Four major themes: how we WORK, how we LEAD, how we ORGANIZE, and what we need (1 of 2)

HOW WE WORK Embrace disruption	1.1 Reimagined Customer Relationships Build virtual go-to-market methods Rethink personalized relationships Remove friction; create convenience	1.2 Employee Work Models Develop new work models Support remote readiness: asynchronous, location-agnostic Balance employee and team needs	1.3 Productivity and Value Prioritize what matters; remove waste; return time to employees Automate; digitize; deploy AI Remodel SG&A/opex	
	2.1 Empowering Leadership Promote adaptation and empathy Train leaders for remote management Empower the frontline	2.2 Cohesive Culture Articulate and evolve culture Build affiliation and mentorship in virtual environments	2.3 Societal Leadership Reduce carbon footprint Create inclusion, access, and equality	

Boston Consulting Group (2020) "Work Will Never Be the Same—Savvy Business Leaders Are Adapting to Change That's Already Here."



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Designing the Future of Work

Four major themes: how we WORK, how we LEAD, how we ORGANIZE, and what we need (2 of 2)

HOW WE ORGANIZE

Be responsive yet resilient

3.1 | Ways of Working

Embrace agile, iterative teaming
Focus on alignment and autonomy
Foster virtual collaboration
Conduct shorter, effective meetings

3.2 | Adaptive Organization

Prioritize employee well-being and wellness
Adopt flexible operating models
Update governance and policies

3.3 | New Talent Models

Digitize the talent journey
Access skills via new talent models
Increase access to diverse talent
Manage attrition of top talent

WHAT WE NEED

Smart environments

4.1 | Space, Design, Location

Right-size real estate footprint
Create safe and smart workspaces
Design human-centered workplace

4.2 | Tools and Technology

Implement virtual workspace design
Adopt collaboration and remote tools
Strengthen cybersecurity and data privacy

4.3 | Learning Organization

Promote digital learning and upskilling
Meet future skills requirement
Embrace remote apprenticeship

Boston Consulting Group (2020) "Work Will Never Be the Same—Savvy Business Leaders Are Adapting to Change That's Already Here."

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