

Industrial Resilience in the Face of Crisis

2021 CIMdata PLM Market & Industry Forum

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PLM Market & Industry Forum

A CIMdata PLM Leadership Event

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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

Industrial Resilience in the Face of Crisis—2021 CIMdata PLM Market & Industry Forum

- Most companies had to change some & others all aspects of their business
- Many have had to increasingly rely on new technologies to support their instantly remote workforce
- Many companies sped up their plans for digital transformation
- Cloud interest & adoption soared to rapidly support changing business needs
- The application of new technologies enabled some to safely extend their expertise into the field
- Companies in many different industries rose to meet the challenges to survive and many to thrive

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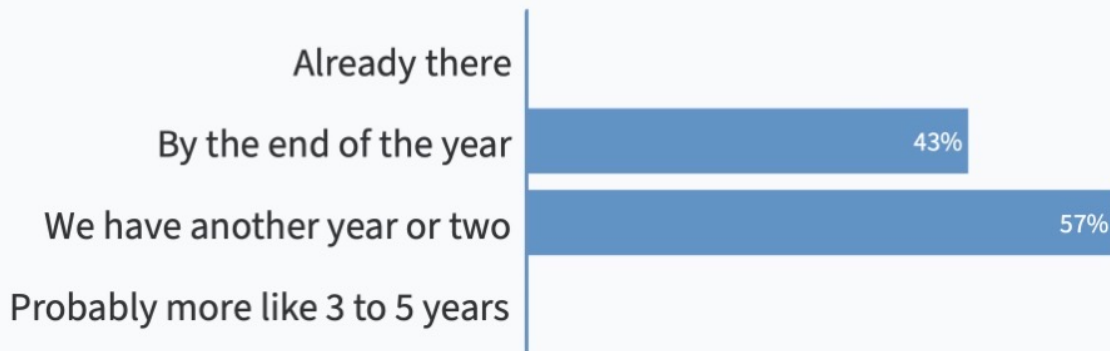
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PLM Foresight Poll

Where are we in the transition from the old normal to the next normal?

Where are we in the transition from the old normal to the next normal?



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Discussion Topics

- What was being said at the beginning of the crisis
- What will the “next normal” look like
- The downsides of the current normal
- The acceleration of technology adoption
- The future of work after COVID-19
- Seeking to be disruption-proof
- The business opportunities

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COVID-19's Impact Will Potentially be Far Reaching

A March 16, 2020 McKinsey article—two possible scenarios identified at that time

Economic impact. Large-scale quarantines, travel restrictions, and social-distancing measures drive a sharp fall in consumer and business spending until the end of Q2, producing a recession. Although the outbreak comes under control in

most parts of the world by late in Q2, the self-reinforcing nature of the downturn kick in and prolong the slump until the end of Q3. Companies lose revenue and lay off workers, and unemployment rises. Investment contracts, and corporate bankruptcies slow down on the banking and financial system.

Economic impact. Demand suffers as consumers cut spending throughout the year. In the most affected sectors, the number of corporate layoffs and bankruptcies rises throughout 2020, feeding a self-reinforcing downward spiral.

The financial system suffers significant distress, but a full-scale banking crisis is averted because of banks' strong capitalization and the macroprudential supervision now in place. Fiscal and monetary-policy responses prove insufficient to break the downward spiral.

The global economic impact is severe, approaching the global financial crisis of 2008–09. GDP contracts significantly in most major economies in 2020, and recovery begins only in Q2 2021.

<https://www.mckinsey.com/business-functions/risk/our-insights/covid-19-implications-for-business>

Both were wrong...

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Ripped from the Headlines

A lot has been written—are we at a new tipping point and what does this potentially mean for the PLM Economy?

The Washington Post
Democracy Dies in Darkness

The hybrid office is here to stay. The shift could be more disruptive than the move to all-remote work.

Citigroup, Ford, TIAA, Target: A growing number of bellwether companies are outlining their hybrid return-to-work plans

By **Jena McGregor**

March 30, 2021 at 6:00 a.m. EDT

Raytheon to shrink office space in push for 'huge savings'

Salesforce says 'the 9-to-5 workday is dead' and will provide 3 new ways for employees to work — including the possibility of working from home forever

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Ripped from the Headlines

A lot has been written—are we at a tipping point? (2 of 2)

The Washington Post
Democracy Dies in Darkness

Ford gives 30,000 employees the option to work from home forever, another sign of workforce transformation

Many workers will have a new 'hybrid option' to work both remotely and in-person, starting in July

By **Hannah Denham**

March 17, 2021 at 3:00 p.m. EDT

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Which Normal?

Why were so many of us working in offices?

- The Old Normal
 - Work in an office where you can be seen
 - Control & oversight
 - Managed environments
 - Manage by seeing
 - Focused, prescriptive & often spontaneous collaboration
 - Monolithic systems
 - Group-think & -motivation common
- The Next Normal (Current Norm)
 - Remote working where you can't necessarily be seen
 - Flexible hours & working conditions
 - Manage by results
 - Collaboration at a distance that must be fostered
 - Flexible, sustainable & configurable platform
 - Individual-think & -motivation common

Where will the balance be found?

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The Potential Downside

Some potential downsides associated with distributed working environments (the Current Norm)

- Motivating appropriate behavior is more difficult
- A growing gap between development & production
- A growing gap between development and sales & marketing
- Processes and many supporting systems were designed and implemented for in-office work
- Data security and data distribution weren't designed or implemented for remote work
- Wide-area networks weren't engineered to support remote work
- Innovation typically required group-think, group-activities...a new way must be found

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The Case for Innovation

The COVID-19 crisis presents an opportunity that few feel equipped to pursue—a June 2020 survey

Although most executives agree that innovating the business will be critical ...

90%

believe that the COVID-19 crisis will fundamentally change the way they do business over the next 5 years

85%

are concerned that the COVID-19 crisis will have a lasting impact on their customers' needs and wants over the next 5 years

... few feel equipped to face the challenge.

21%

have the expertise, resources, and commitment to pursue new growth successfully

2/3

believe that this will be the most challenging moment in their executive career

"Innovation in a crisis: Why it is more critical than ever," Jordan Bar Am, Laura Furstenthal, Felicitas Jorge, and Erik Rot, McKinsey & Company, June 2020.

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The Case for Innovation

What made a company successful historically may no longer be possible during or after the crisis

- In times of crisis more urgent actions must be taken to...
 - Adapt the business' core to meet shifting customer needs
 - Identify and quickly address new opportunities being created by the changing landscape
 - Reevaluate your innovation initiative portfolio and ensuring resources are allocated appropriately
 - Build the foundation for postcrisis growth to remain competitive in the recovery period
- Many businesses simply cannot operate as they have in the past

But, those companies that invest, will be those companies that thrive

"Innovation in a crisis: Why it is more critical than ever," Jordan Bar Am, Laura Furstenthal, Felicitas Jorge, and Erik Rot, McKinsey & Company, June 2020.

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The Response

Response varied significantly by industry...successful companies rapidly changed to address the new demands

- Consulting ...shift to remote delivery
- Retail ...focus on mail & curbside pickup
- Consumer packaged goods ...shift production to specific goods
- Oil & gas ...prepare for tomorrow (MBE)
- General manufacturing ...remote & distributed design
- Defense manufacturing ...remote & distributed design
- Restaurants ...shift to delivery/take out
- Entertainment ...wait it out
- Travel & leisure ...wait it out

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Cloud Adoption Acceleration

This was a surprise? Or was it?

Jan 15, 2021, 08:00am EST | 1,542 views

How The Pandemic Has Accelerated Cloud Adoption



Gaurav Aggarwal Forbes Councils Member

Forbes Technology
COUNCIL POST
Innovation



CLOUD COMPUTING

By David Linthicum, InfoWorld | OCT 23, 2020 3:00 AM PDT

<https://www.forbes.com/sites/forbestechco>

Cloud adoption in a post-COVID world

Many thought that COVID-19 would cause the Great Cloud Slowdown; instead, the opposite happened. What will cloud adoption look like when the masks come off?

<https://www.infoworld.com/article/3586597/cloud-adoption-in-a-post-covid-world.html>

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Cloud Adoption Acceleration

Well, can you?



Can you meet customer demand for cloud computing?

Can you meet customer demand for cloud-based computing?

For tech infrastructure companies, COVID-19 has accelerated customer demand for cloud-based offerings

<https://www.pwc.com/us/en/industries/tmt/library/covid19-cloud-infrastructure.html>

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PLM Foresight Poll

Has your company seen an increase of adoption of your cloud-delivered solutions?

Has your company seen an increase of adoption of your cloud-delivered solutions?



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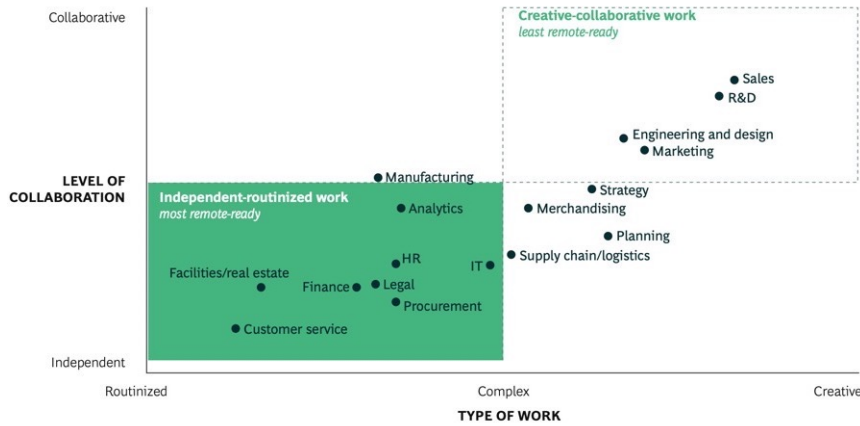
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Readiness for Remote Working

In reality, this hasn't proven to be 100% correct



- Many companies have proved that engineering, design, and R&D can be handled remotely
- Automotive
- Aerospace
- CPG
- High-tech
- Even defense

"Work Will Never Be the Same," By Bharat Khandelwal, Deborah Lovich, Joppe Bijlsma, Frank Breittling, and Penny Metchev, BCG, November 2020

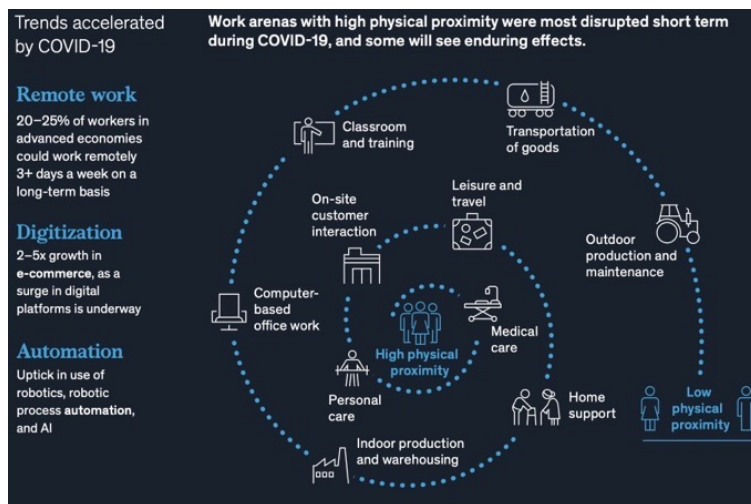


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The Future of Work After COVID-19

The post-pandemic economy—what will it look like



- Remote work
- Digitalization
- Automation
- All three are friends of PLM

COVID-19 has accelerated digitization, e-commerce, and automation

The future of work after COVID-19, McKinsey Global Institute, February 2021.



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The Future of Work After COVID-19

Activities with the highest remote work potential include updating knowledge and interacting with computers

Potential share of time spent working remotely for select activity categories in the United States, %

Activity	Effective potential (no productivity loss)	Theoretical maximum	Tasks that can be done remotely	Tasks that cannot be done remotely
Updating knowledge and learning	82	91	Attend online seminar	Attend surgical skills course
Interacting with computers	70	74	Create electronic data backup	Program robotic engineering equipment
Thinking creatively	43	68	Design layouts for print publications	Create physical prototypes
Communicating with and guiding colleagues	43	63	Discuss business strategies	Direct firefighting or fire prevention activities
Processing, analyzing, and interpreting information	54	62	Analyze industry trends	Analyze crime scene evidence

The future of work after COVID-19, McKinsey Global Institute, February 2021.



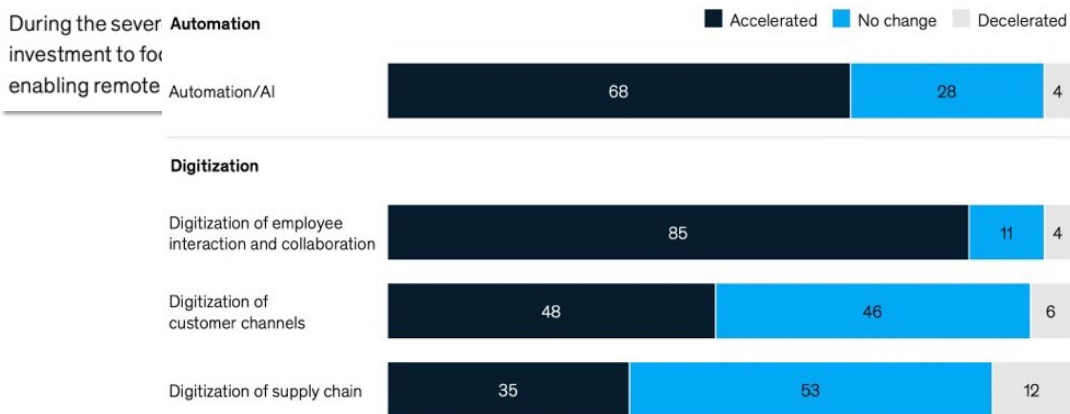
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The Future of Work After COVID-19

Executives say that COVID-19 is accelerating adoption of automation and digital technologies

Companies & technologies Since the start of the COVID-19 outbreak, how has your company's or business area's adoption of the following technology trends changed?
% of respondents (n=800)¹



The future of work after COVID-19, McKinsey Global Institute, February 2021.



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Manufacturers Seek to be Disruption-Proof

This is what companies are striving to do (1 of 4)



- Getting it right can be the difference in making or losing money
- Supply chain is brittle; disruptions are everywhere and it isn't just because of the pandemic
- Can't afford to miss a delivery because you don't have the right stock in house

Navigating disruption

Solving forecasting challenges could be critical in navigating the disruption

"Manufacturers seek to be disruption-proof," 2021 Manufacturing Industry Outlook, Deloitte, 2021.

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Manufacturers Seek to be Disruption-Proof

This is what companies are striving to do (2 of 4)



- Digital twins of:
 - Products
 - Processes
 - Production environments
- These allow companies prepare and adjust quickly to future unknown events like the pandemic

Digital investment

Digital twins could support new levels of resilience and flexibility

"Manufacturers seek to be disruption-proof," 2021 Manufacturing Industry Outlook, Deloitte, 2021.

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Manufacturers Seek to be Disruption-Proof

This is what companies are striving to do (3 of 4)



Supply chain resilience

Manufacturers may expand their options to reduce exposure to trade and other disruptions

"Manufacturers seek to be disruption-proof," 2021 Manufacturing Industry Outlook, Deloitte, 2021.

- Companies must build agility into their supply chains
- A single source approach can be dangerous
- Must be strategic and look not just at cost & quality, but also at availability

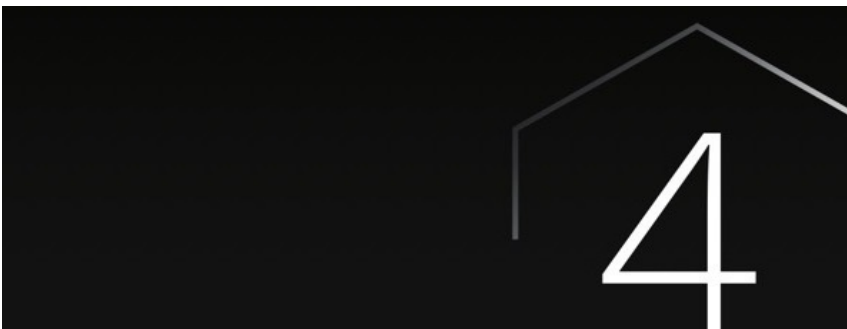
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Manufacturers Seek to be Disruption-Proof

This is what companies are striving to do (4 of 4)



Adapting to the new workplace

Disruption increases the need for greater workforce agility

"Manufacturers seek to be disruption-proof," 2021 Manufacturing Industry Outlook, Deloitte, 2021.

- Need to develop a talent ecosystem— a dynamic network of external partners that can help bolster the talent pipeline

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What is the Business Opportunity?

How can the PLM Economy best support these requirements?

- Continue to position innovation and those capabilities & learnings that facilitate it
- Embrace change...change is what makes life interesting & what drives innovation and business sustainability
- Remember that distributed data and process management requires robust platforms, integrated applications, and an eye on internal & external collaboration
- From CIMdata's 2020 PLM M&IF: "To be successful in today's competitive and very challenging environment, solution providers must stay focused...it's time to carefully invest"
 - Today is no different

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Concluding Remarks

Once again, most companies rose to meet the challenges to survive and many to thrive

- Most companies had to change some & others all aspects of their business
- Most manufacturers faced significant challenges in their businesses due to restrictions placed/being placed on them
- Many have had to increasingly rely on new technology to support their instantly remote workforce
- Many companies sped up their plans for digital transformation (i.e., MBE)
- Cloud interest & adoption soared to rapidly support changing business needs
- The application of new technologies enabled some to safely extend their expertise into the field
- For most, the industrial resilience demonstrated has been impressive

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Q&A

Let's hear what's on your mind?



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Please Stay Safe!

From the whole CIMdata team



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