INFO~TECH
RESEARCH GROUP

2021
TECH TRENDS

Thriving through disruptive change

Creating new options from disruptive effects

Dawn of the Post-COVID-19 Era

2020 ends with the world looking forward to the end of the COVID-19 pandemic while still grappling with the disruptive changes the virus caused to all facets of society.

Businesses were forced to accelerate their digital transformation plans to maintain operations. The economic fallout of restrictive lockdown measures meant that the digital channel was the only customer touchpoint available. Organizations that couldn't adapt either put operations on pause or shut their doors permanently.

Driven by demand, many technology trends accelerated. Machine learning algorithms continued to improve, Internet of Things (IoT) devices became more numerous, infrastructure needs shifted quickly, and data-driven business operations multiplied.

System and environment shocks

The rapid changes to the market environment following the World Health Organization's declaration of a global pandemic illustrate how external events can disrupt business. Governments reacted by imposing lockdown measures that meant many businesses couldn't open their physical locations, and even where they could, they still faced a situation in which consumer confidence was shaken. People either chose to avoid public places because of health concerns or restricted their spending due to an uncertain job market.

Many organizations responded by relying on technologically mediated environments to continue operations. Employees met from their homes via videoconference, students used online learning management systems to complete their school curriculum, and governments rushed to put more services online.

Reinventing value propositions

With technology playing a key role for all organizations just to maintain daily activities, IT was thrust into a critical function. No longer was the IT department supporting capabilities lower down the value stream – it was now core to delivering on the organization's value proposition.

Given the transitional period that's likely ahead, with the pandemic coming to an end and with all the other externalities that could disrupt operations, IT's role remains critical. Organizations that want to avoid disruption from the next crisis will need IT to support capabilities to plan for change and learn quickly. IT must focus on accelerating speed to value and enable flexibility and rapid redeployment of resources.

Things will never be the same

As part of its research process for the *2021 Tech Trends Report*, Info-Tech Research Group conducted an open online survey among its membership and wider community of professionals. The survey was conducted from Nov. 11 to Dec. 7, 2020, and collected 211 total responses. The survey was completed in full by 162 respondents. Chart percentages may not equal 100% due to rounding.

How much do you expect your organization to change permanently compared to how it was operating before the pandemic? (*n=187*)

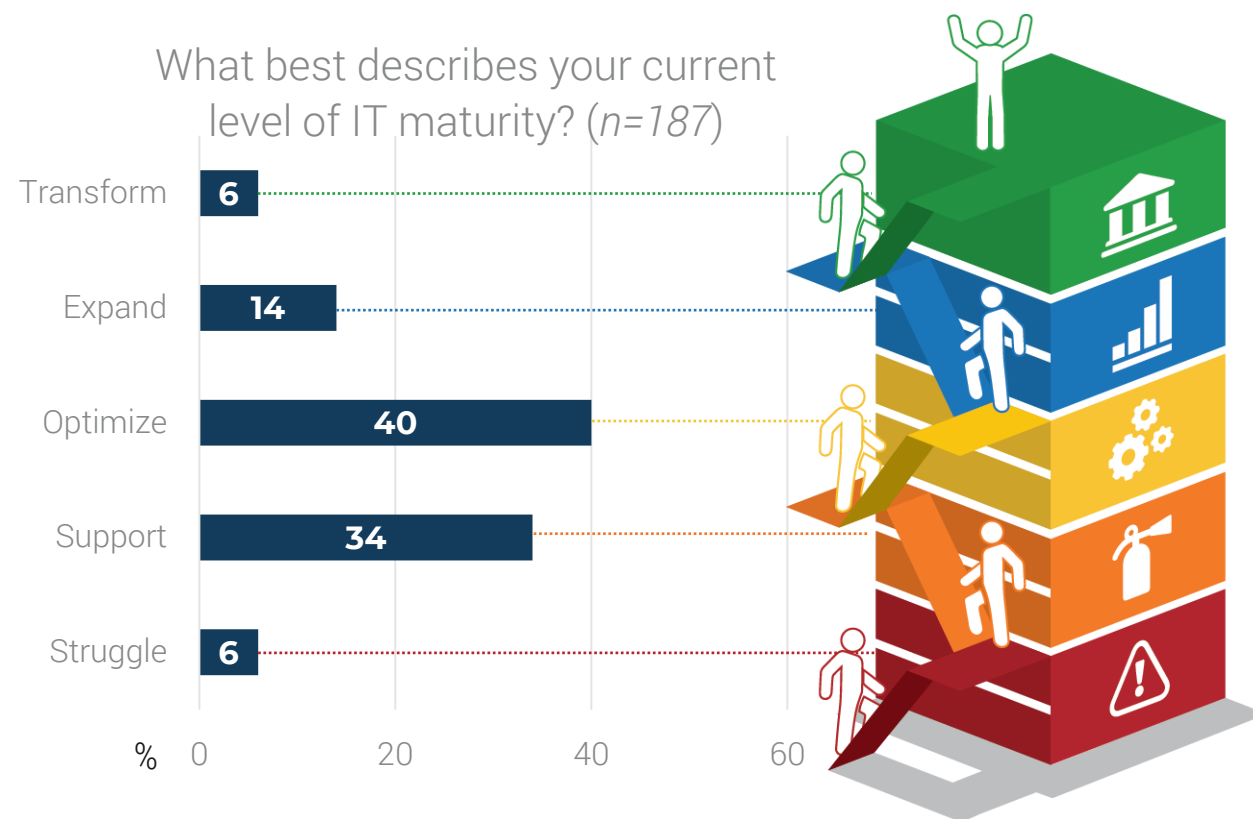| Category	Percentage
Transformative change	10%
A lot of change	47%
A bit of change	36%
No change	7%
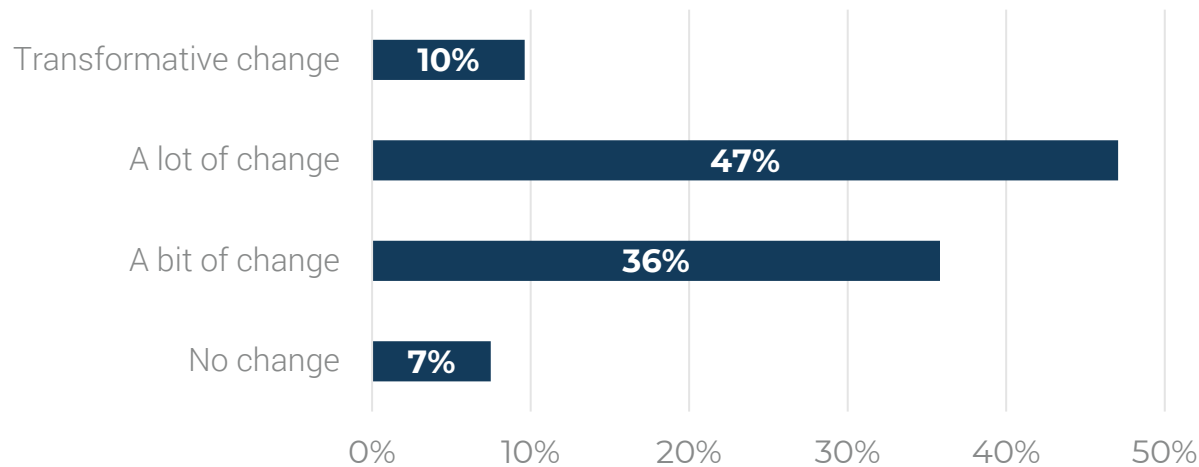
The end of the pandemic may finally feel like it's in sight. Despite that, professionals expect that things will not go back to normal. Instead, they expect that disruption will continue, with 47% saying they expect a lot of change in their organizations in a post-COVID-19 world. Another 9.6% expect transformative change, with a fundamental shift in their business requiring new ways of working.

Professionals expect that their organizations will never be the same as before the pandemic

Despite the expected rate of change, many professionals don't feel their IT maturity is high enough to support it

IT must rise to the occasion

Only 6.4% said IT was ready to help the organization transform, and only 14% expect that IT can help the organization expand. IT must improve its capabilities if it's going to support the change that's ahead.

What best describes your current level of IT maturity? (*n=187*)

Level	%
Transform	6
Expand	14
Optimize	40
Support	34
Struggle	6

% 0   20   40   60

The pandemic highlighted how organizations are vulnerable to change from many contexts

1. Machine learning will create new business categories

- AI and machine learning are maturing and becoming integrated into more products and services.
- Startups are now harnessing machine learning capabilities to disrupt industries by entering with new business categories.

2. The digital skills gap requires that more voices get involved with developing technology

- Nontechnical workers are using new tools to keep up with a shifting job market that rewards digital skills.
- New access to AI and the ability to train algorithms comes at a time when society is skeptical of the use of AI by authorities.

3. Economic downturns demand new business models

- Startups with new products and services that could apply to an established market require enterprise or government partners to help develop proofs of concept.
- Diversified business models help an organization weather an economic downturn and recover more quickly.

4. Lockdowns pushed organizations to a distributed model

- Governments continue to react to the pandemic by imposing lockdown measures that require many businesses to ask employees to work remotely.
- Regional regulatory bodies are limiting the speed at which the healthcare system can scale up its staff to deal with the increase in patients.

5. Data sovereignty requires infrastructure flexibility

- Nation states are increasingly interested in how data is stored, transferred, and processed, and they are creating legislation to govern these interactions.
- IP theft remains a competitive threat.
- In many jurisdictions, individuals have the power to request access to their personal data that is stored on a company's systems.

6. Sustainable goals need digital solutions

- Climate change dominates international discourse. The United Nations' goal is to halve carbon emissions by 2030 and reach net-zero emissions by 2050.
- Many organizations are agreeing that sustainability goals are important to maintain business into the future and are enjoying related benefits such as energy cost savings.

Six trends will help organizations thrive through disruptive change

Adapt

1. Machine Learning by Design

2. Citizen Dev 2.0

3. Venture Architecture

The first three trends of our report focus on **adapting to disruptive change.** Identify the gap between your current operations and where they could be in the new scenario, and make a plan to improve your capabilities to achieve that vision.

Absorb

4. Distributed Autonomous Organizations

5. Self-Sovereign Cloud

6. Digital Sustainability

The latter three trends focus on capabilities and structures that can help your organization **absorb the impact of disruptive market change.** Lessen the blow of a crisis by strengthening all elements of your system and distributing the impact equally throughout.

Technology must go beyond business benefits...

Create a core of innovation that is continuously exploring new opportunities to diversify your business model.

TRENDS

	Machine Learning by Design	Citizen Dev 2.0	Venture Architecture
	Harnessing machine learning as a core piece of the organization's value proposition.	*Enabling nontechnical contributors to use and create AI combined with low-code and no-code environments.*	*Developing and launching innovative new technology ventures from within.*

HUMAN BENEFITS

	Machine Learning by Design	Citizen Dev 2.0	Venture Architecture
Trust	Transparency in when AI is involved in a system and what role it plays.	Organizations can form relationships easier when they are open with their data and supporting resources.	Build relationships to work with an external community through inclusive and clear governance structures.
Experience	Unlock creative potential by using machine learning to brainstorm and quickly reinforce what works.	Realize empowerment by relieving workers from tedious tasks involved in their workflow.	Drive satisfaction in the customer experience by creating more convenience and more personal journeys.
Resilience	Avoid errors before they cause disruption by automatically detecting when a system is outside of its normal range.	Widening the available talent pool that contributes to technology solutions helps employees update skill sets and maintain their value.	Preparing new value propositions before the current ones are no longer valid helps avoid crises and broaden employee perspectives.

Absorb

Use digital tools to renew the value proposition of your organization to reflect the full context of the market scenario.

...and improve human aspects of experience, trust, and resilience

	Distributed Autonomous Organizations	Self-Sovereign Cloud	Digital Sustainability
TRENDS	*Collaborating without a central hub and taking control over the work day.*	*Balancing the capabilities of the public cloud with the control and privacy of on-premises infrastructure.*	*Using digital technologies such as software and machine learning to drive emission reduction and cost efficiency.*
HUMAN BENEFITS — Trust	Privacy when working form home is respected, and work boundaries are clear and consistent.	Transparency in where data is stored and how it's used.	Transparency and accountability with digital tools tracking carbon emissions.
Experience	Flexibility comes from employees having different work scenarios available to them.	Reduce the burden of complicated technical infrastructure decision making.	Values-driven customer interactions that build relationships.
Resilience	Working remotely allows for more work-life balance flexibility by eliminating the need for a commute and office presence.	Consistency comes from working with data in the same legal jurisdiction as your customers.	Avoid climate disruption and reduce energy requirements.