

IT ALLY *institute*



SMB BUSINESS DISRUPTION & TECH DEBT 2.0™

How IT executives are leading their SMB organizations through the challenges of COVID-19 and expectations for accumulation and mitigation of various elements of technical debt.

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BUSINESS DISRUPTED

As the SARS-CoV-2 virus, which causes COVID-19, began to spread in the United States governors of most states responded by shutting down or greatly restricting many non-essential businesses. Events were cancelled, schools and churches moved online, and restaurants did curbside pickup or delivery. In addition to mandated restrictions there was a public health advisory to stay at home except when absolutely necessary.

These measures were implemented to help slow down the spread of SARS-CoV-2 in the hope of providing time for the healthcare system to prepare and diminish peak loads on hospitals.

Although the details of the shutdowns varied in degree of restriction and duration from state to state, by late March 2020 much of the country was in shutdown and it became clear that the impact on demand for many businesses was going to be severe.

A national (USA) study of 5,800 small and medium size businesses (SMBs), [published in PNAS](#), found that “demand shock” was the largest factor in causing temporary or permanent shutdowns of SMB companies. Overall the importance of “demand shock” was rated 78 out of a possible 100 points where the range of 79 to 100 was labeled “extremely disruptive”

Another [study](#) found that by late March 2020 65% of small businesses had already noticed a decline in revenues. And, for many it got worse from there.

It is important to note that the pandemic is not universally bad for business. There are a variety of SMB businesses that the U.S. Chamber of Commerce has [identified](#) as thriving during the pandemic ranging from grocery stores, to delivery services and cleaning services.



INAUGURAL STUDY

We had just launched the [IT Ally Institute](#) as a non-profit organization designed to deliver value to IT leaders in SMBs through roundtable discussions, research, education and publications such as Tech Debt 2.0™ by our founder Michael C. Fillios.

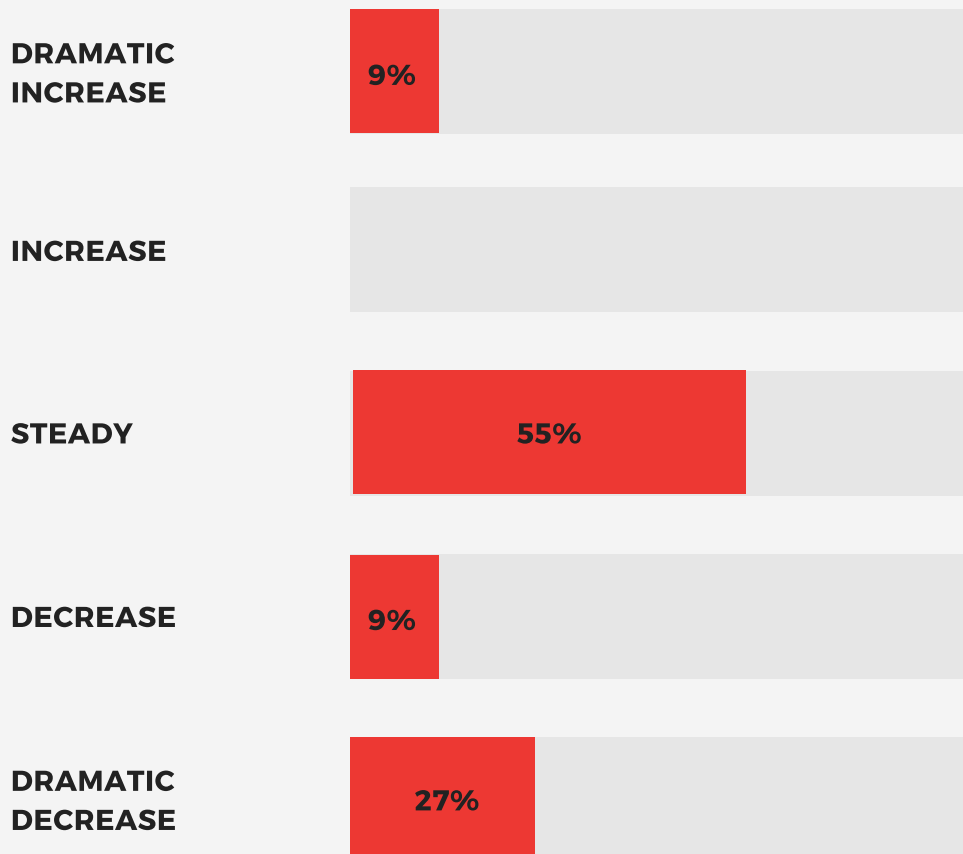
Associated with the book is the Tech Debt 2.0™ Diagnostic, a 9 category, 54 question diagnostic that generates a profile of technical debt within an organization. As business disruption due to COVID-19 became widespread we decided to ask our roundtable members to participate in a survey along with discussion during a virtual roundtable. These IT executive roundtables are conducted in cooperation with the [Cincinnati USA Regional Chamber](#).

We talked to these executives about how their IT organizations were responding to the need to rapidly shift to work-from-home (WFH). We also picked 9 questions to represent our 9 areas of Tech Debt 2.0™ and rephrased them to ask whether they anticipated that their organization would invest time and money to mitigate each type of technical debt or whether they expected to accumulate more of this type of technical debt due to business pressure during this season of business disruption.

STUDY RESULTS

Impact on overall business demand

As cited in the introduction, much broader studies indicate that something like 65% to 80% of SMBs are experiencing a decline in demand for their company's products or services, sometimes threatening the very existence of the organization. In our roundtable study the organizations we talked with are in a much better position with only 36% experiencing a decrease or dramatic decrease in demand.



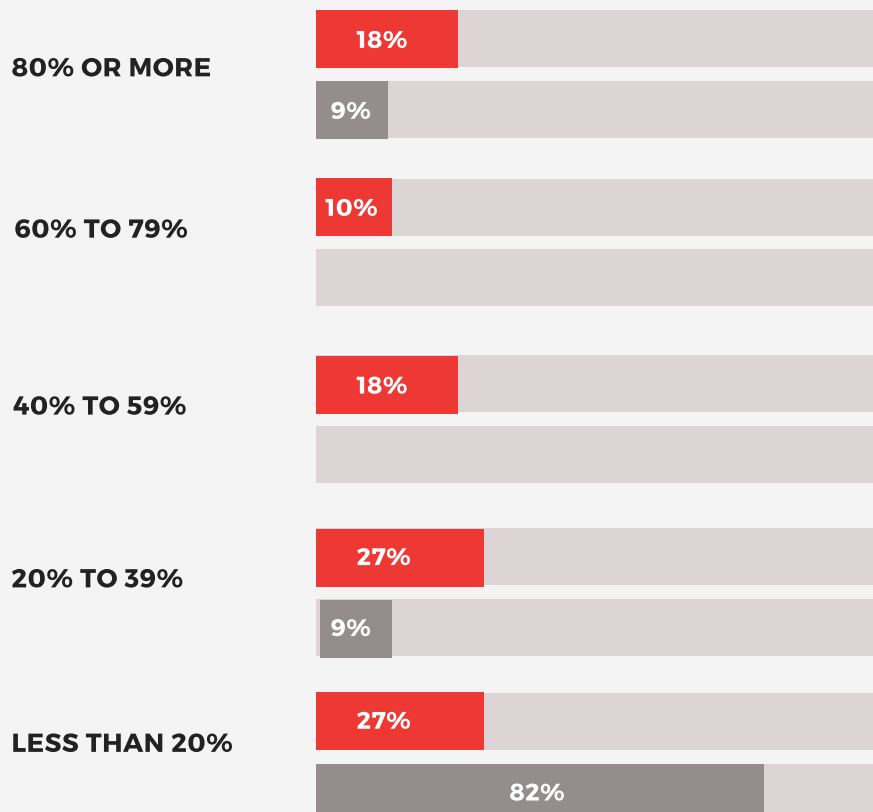
TRANSITIONS TO WFH

Work From Home

A study fielded by [SMB Group](#) found that prior to COVID-19 74% of SMBs had some provision for WFH and that 80% of those were now expanding WFH provisions. Of the 26% that hadn't previously made provision for WFH about half had either already implemented WFH provisions or were in the process or planning to do so. In our study we asked "What percentage of your workforce would normally work from home or on the road?" And then, "What percentage of your workforce is currently working from home?"

TRANSITIONS TO WFH

■ DURING COVID ■ BEFORE COVID





TRANSITIONS TO WFH

Prior to the pandemic, our IT leaders were mostly supporting less than 20% of their workforce with WFH technology. During the pandemic driven shut-downs of public places and guidelines to WFH most of these businesses did in fact shift noticeable proportions of their workforce to WFH with 18% supporting nearly everyone as WFH.

During our roundtable sessions we heard that these organizations all had some experience supporting WFH so the basics of remote work access and technology were already known. The challenge was how to rapidly scale from less than 20% of the workforce working remotely to enabling the majority of employees to do so.

WFH CHALLENGES

“Remote workforce is a reality that can be enabled. Team had to go through a crash course on remote tools for collaboration.”

“Dealing with all the wireless/Internet connections people have at home”

“Increase in remote VPN usage - training novice users.”

“Enable VPN connection for high number of employees and partners globally”

“User adaptation for those that did not previously embrace cloud/mobile applications”

“Keeping workers safe online with the new wave of Covid related scams and phishing attacks.”

“Provisioning new equipment that we didn't have on hand.”

“Getting equipment due to limited qty or out of stock for various reasons related to Covid”

“Phishing email increase”



WFH CHALLENGES

“Google Chrome v84 update impacting legacy systems”

“Continued hesitation of large IT project spend approval”

“Reduction in workforce causing project delays and less efficient systems support.”

“[enforcing] Consistent use of organizational approved products such as Skype which we provide vs. Zoom which we do not.”

“Transition has been relatively easy. We keep in touch with email and Zoom”

“Communicating Tech Debt and how we need to be more proactive in updating technology.”

Keeping up with all the changes and lack of government leadership in supporting or setting standards / ruling consistency instead of separation, anger and indecision we need to move forward and this is going to last so much longer



FORCED WFH

Forced WFH giving birth to longer-term acceptance of remote and WFH arrangements

[predict] “Decrease of on-premise networking capital. Smaller offices.”

“Our staff has been forced to get creative with conference software and other team oriented software such as Teams and Skype. Even though they have had these platforms for a while, they are now seeing how useful these tools can be.”

“Many organizations will realize they can work from home and save costs on rent. I think we will see 25% of the workforce move out of offices and to their residences.”

“New opportunities of ways to work “

“Development of new products”

“Understanding risks and leveraging the value of mobile/remote workforce.”

“Reduced footprint and considerable rethinking about travel and entertainment expenses after Covid 19”

COVID-19 IMPACT

Exploring the Impact of COVID-19 on Tech Debt 2.0™

Defining Tech Debt 2.0™:

Tech Debt 2.0™ is defined to encompass all future organizational obligations inherent in every decision to acquire, service or retire technology.

Therefore the definition of Tech Debt 2.0™ applies not only to software development but the full range of enterprise technology including third party software, hardware, data, processes, contracts, upgrades, hiring decisions, staff training and technical leadership.

The dramatic pressures on many businesses triggered by COVID-19 have us speculating about what kinds of Tech Debt 2.0™ will accumulate over the next 18 months, and which might possibly be addressed. In this next section we ask you to anticipate how the business pressure of COVID-19 will impact a handful of measures of technical debt derived from our Tech Debt 2.0™ Diagnostic

VITAL ASSETS VS. COST CENTER

Q1

Do you expect that business pressure of COVID-19 will help your organization to more strongly view the IT department as a vital asset and competitive advantage or will the cost pressures cause them to increasingly view IT as a cost center to be minimized?

VITAL ASSETS VS. COST CENTER

For our executives 64% see the performance under pressure during the early stages of the pandemic gives a boost to the standing of the IT department in the eyes of other executives.

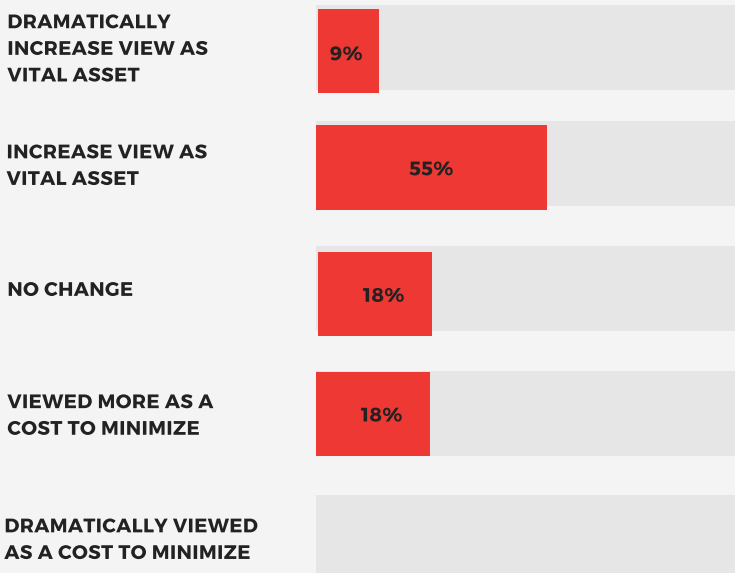
Most feel like their department really stepped up to the challenges of rapidly moving to WFH and the larger organization is impressed and grateful.

In contrast to that 18% expect that over the course of the pandemic financial pressure on the organization will push them more firmly into the box as a cost-center to be minimized, though not dramatically so.



In roundtable discussions we heard a word of warning. Executives such as President, owner and CFO now seem to believe that every IT project and rollout should be handled as quickly and seamlessly.

VITAL ASSET VS. COST



"Why can't you do project X that fast?"

These questions often arise from a lack of knowledge about the particulars of various IT projects. There is a big difference between rolling out remote connectivity to systems that are already in use, and something like a software migration or rolling out entirely new software to employees with the need for business analysis, requirements definition, system configuration and training.

Notwithstanding this warning, IT departments that often don't get noticed except when something goes wrong have had a shining moment and that is expected to do good things for the recognition of IT as a vital asset.

DOCUMENTATION VS. KEY-MAN SUPPORT

Q2

Will the pressures from COVID-19 increase the commitment to documenting systems instead of relying so heavily on “key-man” support personnel?

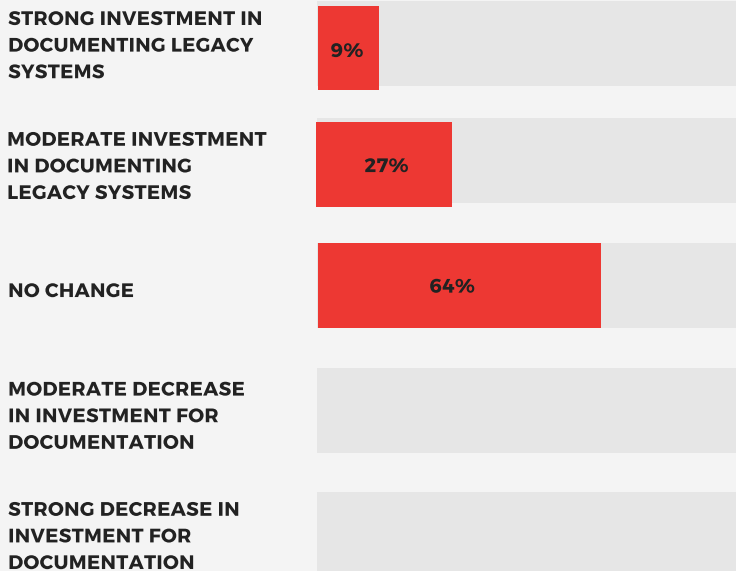
DOCUMENTATION VS. KEY-MAN SUPPORT

The majority, 64% of executives don't expect any change in their investment in documentation, while the other 36% expect some increase in investment.

Disasters often highlight dependencies on key personnel who may be the only employee who really understands a particular system that is vital to the business. Our IT leaders recognize the problems and risks inherent in key-man dependencies. But in an environment with very lean IT staffing this is a chronic problem.



DOC VS. KEY-MAN SUPPORT



Taking time to document systems removes a person who is usually already fully engaged in other pressing tasks. Taking time to crosstrain another IT staff person takes 2 people out of the action. And, when the IT executive has been promoted from within they may still be the key-man for one or two systems. During our roundtable conversations a couple executives admitted, rather sheepishly that they were the key-man.

Our executives know that this kind of technical debt needs to be addressed with better documentation and training. While current pandemic pressure may draw attention to these problems, and some will get the resources, most don't really expect to be given more resources to solve the key-man problem.

PROJECT BUDGETS: MORE CHAOTIC OR MORE RIGOROUSLY ALIGNED

Q3

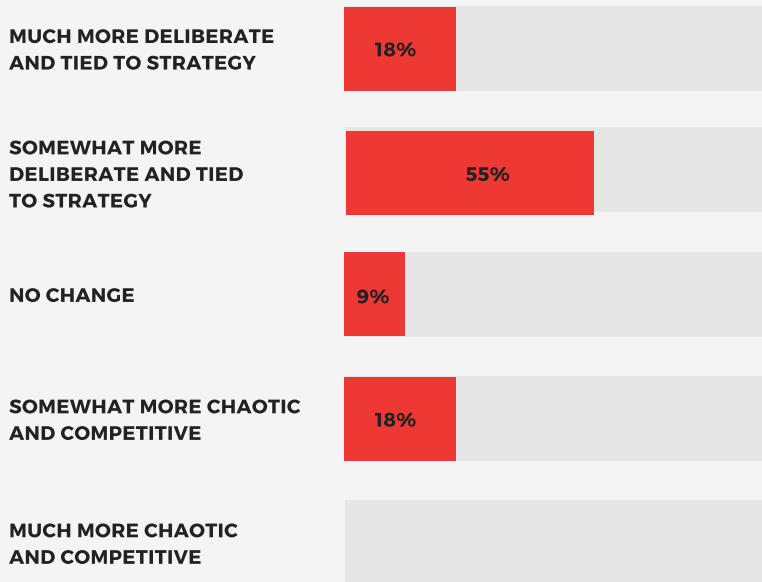
Will the pressure from COVID-19 increase the rigor with which IT project budgets are matched to corporate goals or will the project budgeting become more chaotic as pent up demand from various departments causes competition?

PROJECT BUDGETS: MORE CHAOTIC OR MORE RIGOROUSLY ALIGNED

Most (73%) of our executives expect somewhat, or much more focus on rigorously aligning projects with corporate strategy.

While this is the rational approach to budget pressure that many are experiencing or expecting to experience, there are a minority of executives that expect chaotic competition for project budgets as we hope to return to normal sometime in 2021.

BUDGET PLANNING



Some of this will depend on how severely budgets are impacted. For businesses experiencing substantial, sustained decrease in revenue there will be little project budget to fight over. On the other hand, the minority of organizations that are currently experiencing high demand and just trying to keep up may have a hard time reining in the free spending that often accompanies periods of high growth.

IT CENTRAL TO BUSINESS AGILITY

Q4

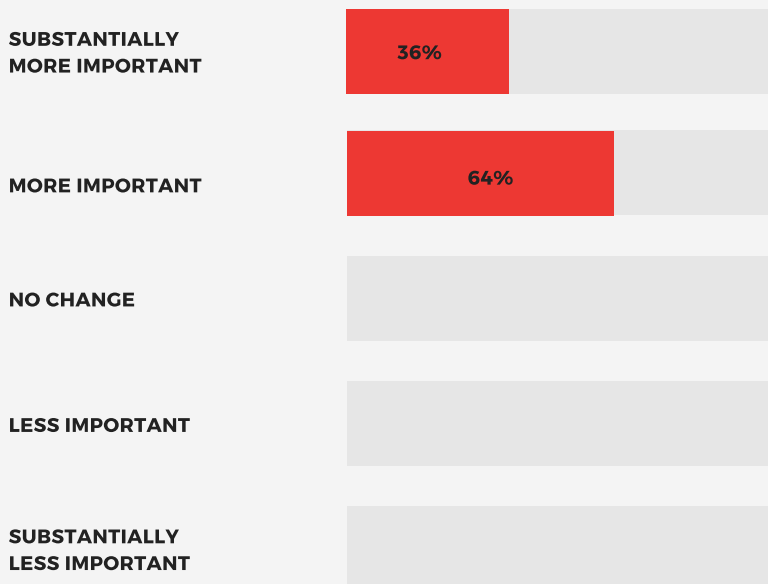
Will the pressure of COVID-19 cause IT services and capabilities to be seen as more central to business agility and customer responsiveness or diminish the role of IT in business agility?

IT CENTRAL TO BUSINESS AGILITY

All of our IT executives believed that the business disruption and pressure surrounding responses to COVID-19 is causing IT services and capabilities to be seen as more or substantially more important to business agility than in the past.

In this digital age it is almost impossible to conceive of a business that is agile without some substantial role of technology. But sometimes resistance to agility and change come from within the technology department.

IT & BUSINESS AGILITY





IT CENTRAL TO BUSINESS AGILITY

One CIO indicated that a portion of his staff that was very forward looking and willing to learn and implement new technology including leading the way to cloud applications.

“We've already identified several underutilized systems that can be connected through APIs and/or leveraged more opposed to 'needing this new widget'. Staff is frankly amazed out how systems are now being connected and 'talking' to one another (i'm looking at you, Finance).

Likewise, traditional workflows are now the sins of the past. Shame on any organization that is not finding efficiencies either through labor, utilities expense, hardware advancements, cloud accessibility, etc.. And if the narrative is spun correctly, the 'sustainability model' that is born out of it can be touted as the beneficial new norm. The current younger generations will be looking closely at what companies adopted these new sustainable practices and hard targets to achieve in the coming years to improve the environment. “

IT CENTRAL TO BUSINESS AGILITY

Another articulated the agility challenge like this:

“Reassurance that the path we took is what positioned us exceptionally well to weather the storm. Now, it's vitally important that we take that agility and apply it to what potential new businesses and revenue streams might be necessary to ensure our entity is a going concern.”

Another executive explains the agility/flexibility opportunity like this:

“Proving out the that most employees can work from home and be productive, increased acceptance of collaboration tools, showing the value of having virtual desktops to allow flexibility, more appreciation for solutions that can be implemented quickly to address a business need as a result of COVID (example: employee health screening app).”





IT CENTRAL TO BUSINESS AGILITY

And, business agility creates opportunity for revenue even in the middle of great change as explained by this executive:

“The question about business impact on demand is related to this. We lost significant business due to school closures and restaurant closures/limitations and in order to provide food for school communities in a sanitary way (ie individual portions to be sent home with students/families vs bulk 3 or 5 lb packages) we had to shift packaging models and adapt to keep revenue flowing although not at a high profit level. Additionally we have received contracts for high volume orders based on USDA efforts which represents a shift in where our volume of product is going but has resulted in high profitability. These orders are coming to us from the major food manufacturing businesses that received USDA contracts and cannot meet the demand on their own.”

HARDWARE REFRESH CYCLE

Q5

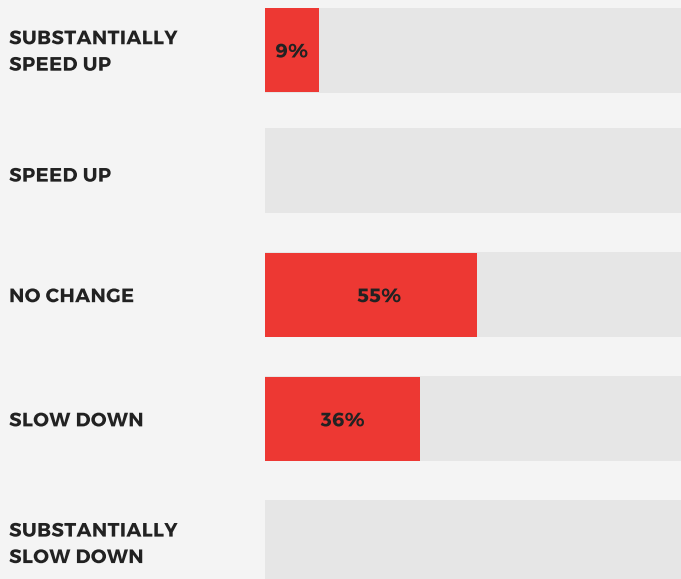
How will business pressure from COVID-19 impact hardware refresh cycles within your organization?

HARDWARE REFRESH CYCLE

On the one hand the pressure to have many more employees suddenly working remotely reveals gaps in hardware capabilities, laptops that aren't really up to video conferencing and routers and servers that aren't equipped to handle the load of so many VPN connections. And, so we might expect a sudden surge in updating equipment. That was true for 9% of our companies, but the majority (55%) are holding steady to their existing cycle, while 36% expect it to slow down.

A firm (client of ours) sells used and refurbished routers and switches. Their business hit a large spike in the early weeks/months of the pandemic shutdown. What this suggests is that the surge in WFH revealed network infrastructure deficiencies but because of budget pressures many customers turned to the refurbished market. They are spending for example \$3500 on a couple refurbished routers and switches that are better than what they currently have but are delaying the \$70,000 network upgrade that is needed longer-term.

HARDWARE REFRESH CYCLES



One of our executives explains how they are dealing with the client device hardware update and the legacy application situation with a thoroughgoing VPN, virtual desktop approach.

“Legacy apps that run on older operating systems, COVID is forcing us to adopt 100% virtual desktops that run the latest OS. The days of 'keeping that one desktop running to support the old app' no longer exist. Our hardware approach is also changing. The old process of a 'loaner laptop' has been replaced with 'use your own device and download the virtual desktop app'”.

INVESTING IN BUSINESS CONTINUITY (BC) AND DISASTER RELIEF (DR)

Q6-A *Did your organization have a business continuity and disaster recovery plan? If yes, did your plans include preparation for an epidemic/pandemic?*

In 2016 Nationwide Insurance worked with Harris Polls to survey 502 small business (under 300 employees) owners.

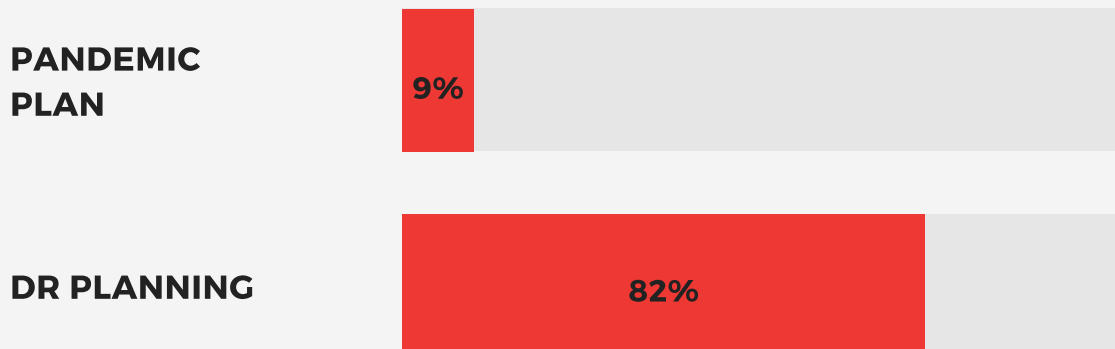
At that time they found that 284 (57%) of these owners did not have a written disaster recovery plan.

Clearly our small sample of IT leaders are not only joining roundtables to improve their leadership, they are also executing on business and technology basics with 82% having a disaster recovery plan in place prior to the pandemic

However, even among our better prepared IT leaders, only 9% had included planning for a pandemic.

We also asked them to predict future investment in DR/BC.

DISASTER RECOVERY AND BUSINESS CONTINUITY PLANNING



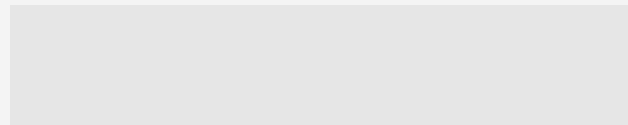
INVESTING IN BUSINESS CONTINUITY (BC) AND DISASTER RELIEF (DR)

Q6-B *How will pressure from COVID-19 impact investment in Business Continuity (BC) and Disaster Recovery (DR)?*

As might be expected the disruption to business out of the public health driven shutdowns has heightened the focus on BC and DR planning.

We find it interesting that even though this group is better prepared than the national average for SMBs the majority are still expecting at least a modest increase in BC/DR investments coming out the other side of this pandemic.

**SUBSTANTIAL
INCREASE IN
INVESTMENT**



**SOMEWHAT
INCREASED
INVESTMENT**

73%

NO CHANGE

18%

**SOMEWHAT
DECREASED
INVESTMENT**

9%

**SUBSTANTIAL
DECREASE IN
INVESTMENT**

RETIRING LEGACY APPLICATIONS & MIGRATING TO THE CLOUD

Q7

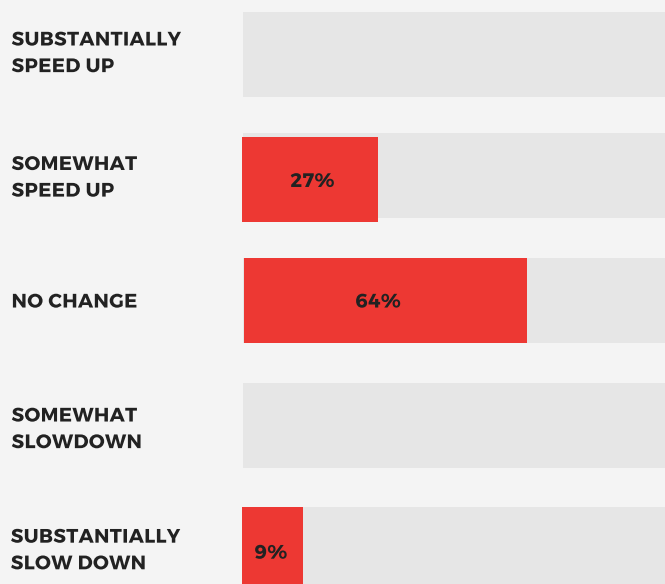
Will pressure from COVID-19 increase or decrease the pace at which your organization is retiring legacy applications and migrating to cloud enabled applications?

RETIRING LEGACY APPLICATIONS & MIGRATING TO THE CLOUD

The majority (64%) of our executives do not expect the pressure of the pandemic to change the pace at which they retire legacy applications.

While 9% expect a substantial slowdown in migration, 27% expect to speed up the pace of migration somewhat.

SPEED UP RETIRING LEGACY APPS



A different executive paints a bleaker picture of the impact on their legacy application strategy.

“Our organization will likely put a hold on new/improved implementations due to overall budget constraints. We are already saddled with several incongruent legacy platforms and this situation will only serve to exacerbate these issues.”

A study of SMB companies by the SMB Group found

“Across all application categories, 83% or more of respondents said cloud applications have been valuable in helping to weather the COVID-19 crisis, and 37% said that the pandemic has made them more likely to choose a cloud solution for new application investments.”

In roundtable discussions the short-term responses to WFH were mostly around increasing VPN capacity which is largely independent of migrating applications to the cloud.

However, one executive indicated that this crisis helped motivate and hurry along efforts to configure API capabilities in some applications and write integration scripts to make applications more integrated and interconnected within their enterprise.

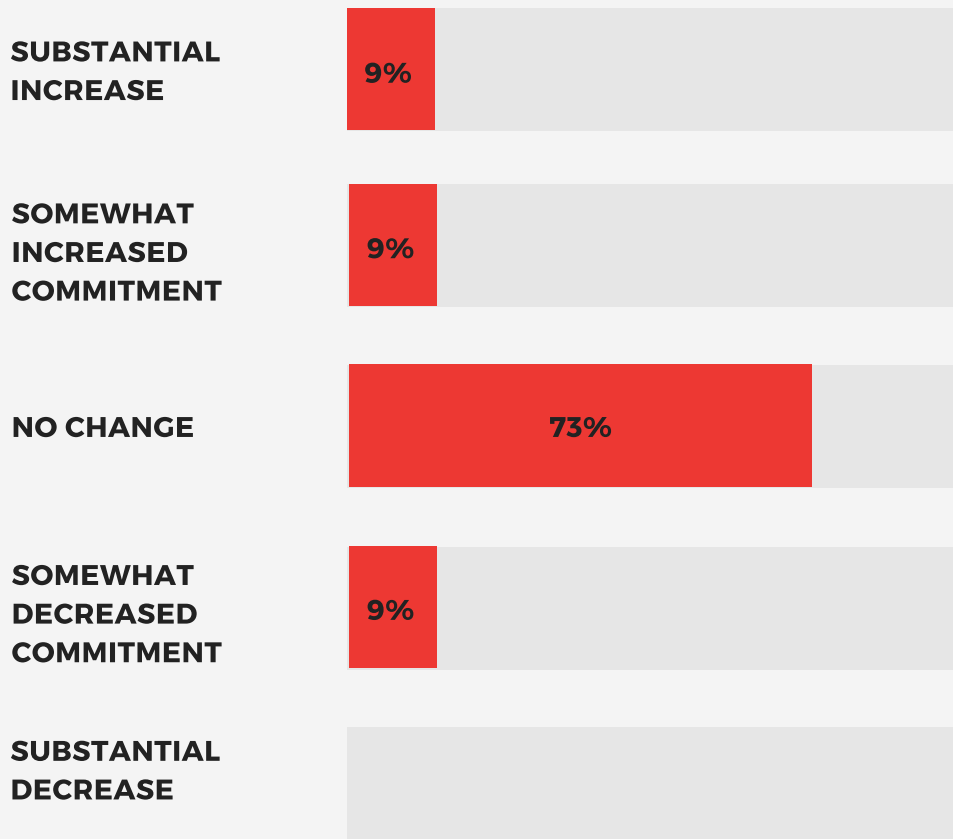
DATA GOVERNANCE AND QUALITY CONTROL

Q8

Will the work-from-home pressure from COVID-19 increase the commitment to data governance and quality control for data resources or will there be a decrease due to cost pressures?

A strong majority (73%) of our executives expect no change in commitments to data governance and quality control over data assets, 18% expect some or substantial increased commitment, while 9% expect somewhat decreased commitment due to cost pressures.

COMMITMENT TO DATA GOVERNANCE & QUALITY



ACCELERATED MINDSET FOR PROJECT DELIVERY

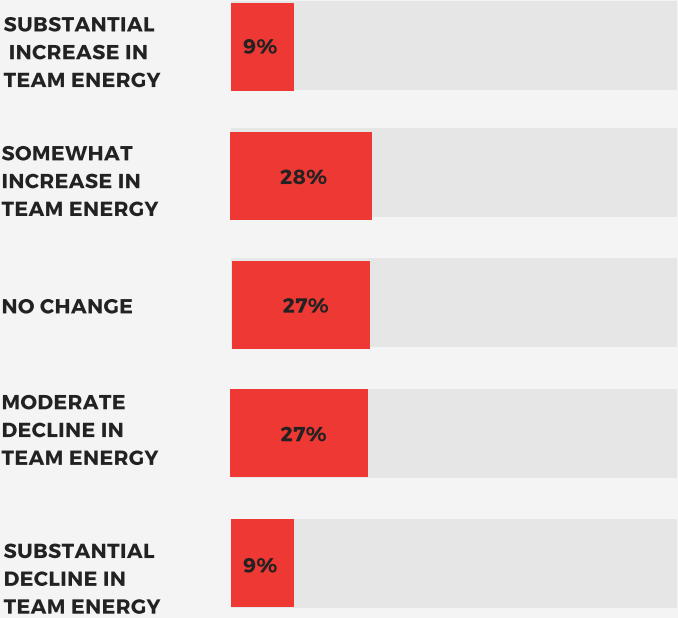
Q9

Will the emergency response needed for COVID-19 energize an accelerated mindset for future project delivery?

ACCELERATED MINDSET FOR PROJECT DELIVERY

This question generated the most varied response from our roundtable executives, with 9% each expecting substantial increase or substantial decline in team energy for project delivery and equal splits between moderate increase, moderate decline and staying the same. We expect this may depend in part on how soon businesses are able to safely return to something resembling normal operations.

CREATE ACCELERATED DELIVERY MINDSET?



On the one hand as discussed relative to other questions, IT teams are feeling like their good work is currently being recognized. That sense of purpose and honor for going above and beyond to fulfill one's role can be very energizing.

On the other hand the stress of having gone above and beyond can cause a counter response for subsequent projects. It requires observant wise leadership to protect the team and give it rest when needed while also inspiring and building on this momentum to create a culture of energetic and agile project delivery.

One executive expressed the importance of leaders looking out for their team.

“Volatility of the situation and maintaining team health in focus.”

SIX TAKEAWAYS FOR SMB LEADERS

01

EMPHASIZE BUSINESS AGILITY & ROLE OF IT IN AGILITY

The businesses that were able to rapidly adjust to new economic realities and seamlessly support employees working from home are faring best in these difficult circumstances. It is critical for IT leaders to showcase their team and what they have accomplished in making those transitions. But more important is connecting the dots between rapid response in IT and the ability to be agile as a business. In the end business agility is what ensures survival and even pivoting to take advantage of new opportunities before competitors do. Now is the time to drive home just how essential IT is to overall business agility.

02

CONTINUE MIGRATING APPLICATIONS AND SERVICES TO THE CLOUD TO ENSURE FLEXIBILITY

Although our executives only expect a modest increase in retiring legacy applications we believe that retiring legacy applications and migrating to the cloud is one of the key ways the IT department can ensure flexibility going forward. Subscription based services can be extremely important not only when your organization needs to cut back but also to easily scale up as business resurges or pivots to new areas. Also more modern applications will typically run on various client devices from mobile phones to tablets and laptops. Your employees will thank you.

03

EXERCISE FINANCIAL DISCIPLINE

Financial discipline and close alignment with company strategy and planning is vital. If you are in an SMB suffering from demand shock and revenue is scarce, every dollar spent needs to be scrutinized for alignment with goals and absolute necessity. You may need to go the extra mile to make the case for certain investments. On the other hand as an IT leader you will need to exercise financial discipline, telling your own team no or wait on some investments. If you are fortunate enough to have revenue and employee count growth during this season it is still important to maintain financial discipline and not let the pressure of growth push you into bad technology decisions.

SIX TAKEAWAYS FOR SMB LEADERS

04 STEP UP ON SECURITY

The pandemic and the WFH have introduced additional security vulnerabilities. Make sure the security basics are in place with passwords changed and access turned off for employees who have been furloughed or laid-off. Former employees who feel unfairly treated in cutbacks can be a risk factor. And, for those employees working from home pay attention to the new network security risks from home WiFi networks, to ISPs or the social side of security when your team members are helping an employee with connectivity and access issues. When you get a moment to reflect you might ask your IT team to help update security policies to cover what they are experiencing during this pandemic.

05 LENGTHEN YOUR HARDWARE REFRESH CYCLE

The area where our executives expected to accumulate the most new technical debt is in hardware refresh cycles. While we do not advocate ignoring hardware replacement or upgrades entirely during this season we do believe that many businesses can push out replacements a few months to give themselves financial breathing room. The good news is that in many ways hardware refresh is the easiest technical debt to mitigate as business bounces back.

06 TAKE CARE OF YOURSELF AND YOUR TEAM

In times of stress it is critical that you watch out for your own health and the health of your team. It is important to understand when you can, and even must push through and work crazy hours. But it is equally important to give yourself and your team a break. Celebrate and reward their good work and find time for them to relax.

STUDY PARTICIPANTS

Profiles of our Executives and Companies

Our roundtable members all work from the greater Cincinnati area. These executives are all senior IT leaders in their organization, typically the most senior, with titles varying from CIO to IT Director. Eleven (11) roundtable executives filled out structured surveys and additional executives contributed qualitatively during the virtual roundtable discussions.

Industries represented include:

- Manufacturing
- Transportation & Warehousing
- Healthcare & Pharmaceutical
- Banking, Finance & Insurance
- Non-profits
- Professional Services

By size, the organizations these executives serve, tend toward the upper end of the SMB market with 55% having more than 400 employees, another 27% falling into the 100 to 199 category with 18% having fewer than 100 employees.

The size of the IT department that services those organizations breaks out like this:

- 18% with teams of less than 5 FTEs
- 27% with teams of 5 to 9 FTEs
- 36% with teams of 10 to 19 FTEs
- 9% with teams of 20 to 39 FTEs
- 9% with teams with 40 or more FTEs

ABOUT IT ALLY INSTITUTE

In 2020, Michael Fillios, an entrepreneur and technology executive with over 25 years of experience in transformation, change leadership and operations management founded the IT Ally Institute. The mission – Provide small and mid-size businesses (SMBs) access to knowledge, research and practical tools which help them to improve the capabilities for managing IT in order to future proof their business and improve their tech bottom line. To fulfill that mission, the institute recently published “Tech Debt 2.0 How to Future Proof Your Small Business and Improve Your Tech Bottom Line”. The timely release of this book is crucial to small and medium businesses, providing knowledge, research and tools necessary to confront today’s challenges. SMBs have taken a tremendous hit in 2020 with the Covid-19 outbreak presenting unexpected obstacles to their success and survival. How businesses have deployed technology in their organizations is turning out to be a major factor in how, or if, they will overcome those challenges.

To support this bold mission, Fillios recruited veteran industry analyst Michael Swenson, as the Executive Director, to lead delivery of the Institute’s programs in research, peer benchmarking and diagnostic tools as well as contributing thought leadership articles and to provide roundtable facilitation.

Founder **MICHAEL FILIOS**



Michael C. Fillios is the Founder and CEO of IT Ally, LLC., a leading IT and Cyber Advisory firm for small and mid-size businesses. He is a four-time CIO, entrepreneur and senior global business and technology executive with over 25 years of experience in transformation, change leadership and operations management in the Pharmaceutical, Industrials, Automotive, Banking and Consulting Industries. His first book, Tech Debt 2.0™: How to Future Proof Your Small Business and Improve Your Tech Bottom Line, was published by the IT Ally Institute in April, 2020.

In 2020, he formed the IT Ally Institute, a non profit organization that provides research, best practices, thought leadership and peer to peer programs specifically developed for small and mid-sized businesses.

Executive Director **MICHAEL SWENSON**

Michael Swenson has served as an Industry Analyst with IDC covering supercomputers, scientific computing and the life sciences vertical market. Michael helped build the CIO Executive Council associated with CIO magazine in its early growth years from 50 members to over 500. In that capacity he facilitated CIO roundtable sessions, organized workshops, educational sessions and managed all research content for the Council members. In recent years he has run his own technology and consulting firm SimpleBenchmarks LLC.

He will be leading delivery of the Institute’s programs in research, peer benchmarking and diagnostic tools as well as contributing thought leadership articles and facilitating roundtables.

