DIGITAL TRANSFORMATION and the role of APPLICATION DECOMMISSIONING

THE RESEARCH

ANDREW MARSH
Platform 3 Solutions
www.platform3solutions.com

TOM RIEGER
EnterpriseDB
www.enterprisedb.com

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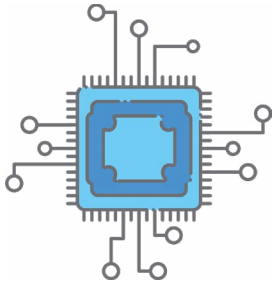
EXECUTIVE SUMMARY

The energy around Cloud, IoT, AI, and these modern technologies are the tail-winds pushing organizations to bring 'digital transformation' as a higher priority to light. While the head-winds of the current COVID-driven economic environment, new competitors disrupting markets, resource constraints and the quagmire of legacy technologies are some of the challenges we are dealing with today.

This research looks at the corporate mindsets, roadblocks, opportunities and needs within organizations to 'clean out the old to bring in the new'. How to better use cloud-based platforms, open source technologies and create a more repeatable 'factory' approach to make this possible.

INTRODUCTION

Since the co-founder of Intel Gordon Moore stated in 1965[1] his initial theorem on how "the number of transistors will double every two years", there has been some amazing business shifts and opportunities as a result of this "doubling", the price keeps dropping. Over time this means the price of memory, storage and compute have also dropped while their capacity and performance keep increasing.



With all this computing power now available, there has also been a shift in the software to make it work. The accelerated development cycles from the utilization of scrum and six-sigma methodologies now brings an even faster evolution of software, at an ever-accelerating pace. Similarly with the advent electricity over 100 year ago, organizations are now moving from a "do-it-themselves" to a "subscribe-and-consume-as-needed approach". No organization builds their own power plant each time a new factory or community is created; a grid is connected to and power is paid for as consumed.

Today corporate data is more valuable than ever and with the need to deliver In-context and on-demand the ability of an organization to analyze, categorize, secure and retain the data is a profound advantage as they "transform" their business.

[1] https://newsroom.intel.com/wp-content/uploads/sites/11/2018/05/moores-law-electronics.pdf

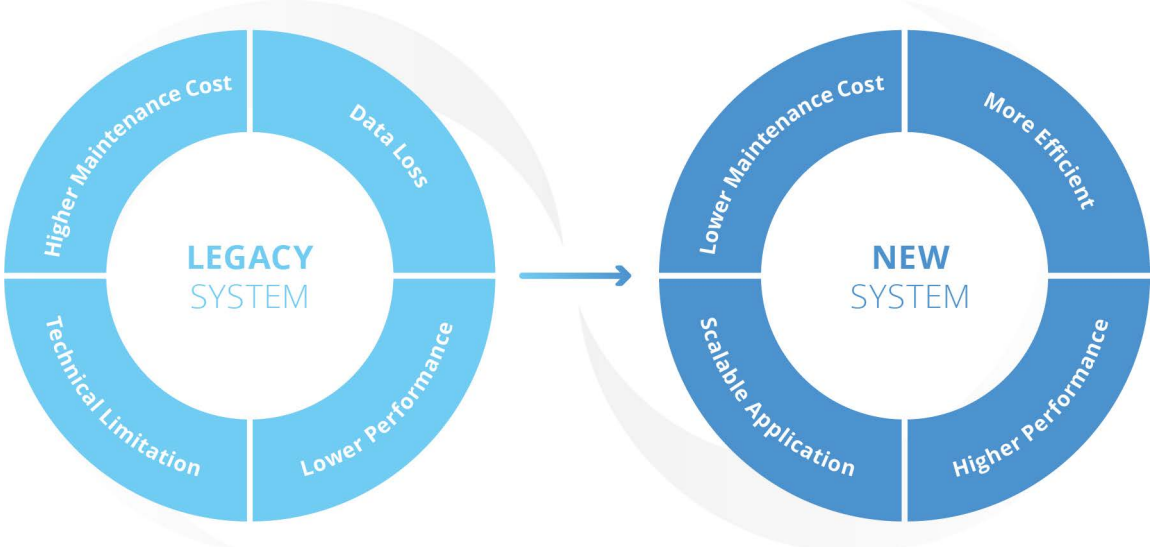
While hosting, running and maintaining your own infrastructure was the norm, the cost and complexities are at odd with the advent of 'cloud' where organizations can subscribe to the services they need. With this combination of on-demand infrastructure, software as a services and un-bridled scale make this 'sharing' of compute and infrastructure appealing for even the most discerning technology consumer. Finally, the evolution of open source technologies through all layers of the technology stack are driving down costs and increasing innovation allowing companies of all sizes to innovate and transform their business.

This mixed world of legacy technologies and the cloud are causing organizations problems. The legacy systems are engineered to be operated:

- On premise in a data center
- Upgraded sparsely
- Managed 100% by internal teams of people
- Utilize a more legacy middle tier and user experience tool set
- Have a custom and tightly coupled integration layer
- Be highly controlled and secure

While modern, cloud-based technologies are:

- Off premise in a cloud platform provider
- Upgraded frequently
- Offload a significant portion of the maintenance of the platform
- Developed using modern technologies that bring rich user experiences and transparent mobility of the application
- Utilize a new integration plumbing using iPaas[2], RPA[3] and published APIs
- Decentralized control and security that creates a single 'virtual view' to an organization



[2] https://www.gartner.com/en/information-technology/glossary/information-platform-as-a-service-ipaas

[3] https://en.wikipedia.org/wiki/Robotic_process_automation

HYPOTHESIS

The research questions were created to look at the following topics as a combination of motivators and detractors that drive corporate technology change:

- **Cost of the status quo is too high** – all the maintenance dollars, people, software audits, etc.
- **Data governance** – rather it is for retention reasons, regulatory requirements, internal compliance and beyond. It is keeping legacy technology running past the end-of-service dates.
- **Cloud** is quickly the new 'platform' most commonly used.
- **Business focus** – Business want to simplify and focus on their core business - not IT
- **Elasticity and nimbleness** are what organizations desire to adjust up (or down) and change when the market landscape requires it.
- **Open Source** in now as good than traditionally single-vendor technologies while also offering a significant cost reduction and simpler licensing terms.

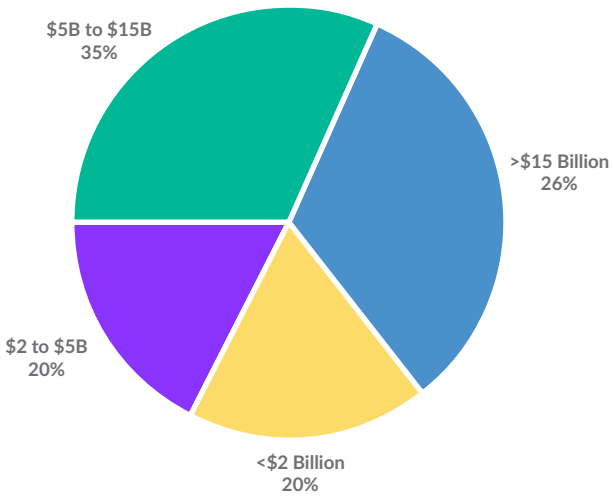
RESEARCH AUDIENCE AND METHOD

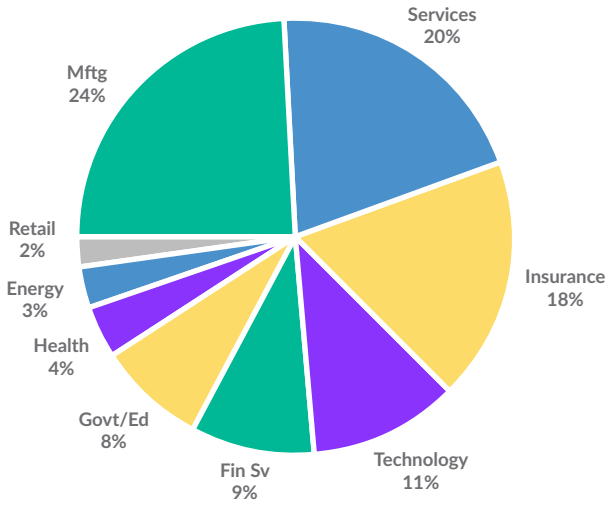
Thousands of technology professionals were asked to participate in a survey, with a focus on the United States. The types and roles of these individuals were not limited by industry but were limited by organization size of over $500 million in revenues.

The responses were accumulated using a paid-for SurveyMonkey subscription focusing on a mix of questions that span across the topic of change, motivations (or inhibitors) of change and a combination of personal and corporate perspectives. The survey length and ease of answering questions were priorities to limit the estimated completion time to under 4 minutes.

Increasing the number of respondents was done by asking the same questions during a webinar to maximize the population size.

The sum of this effort resulted the following demographics.





SURVEY RESULTS

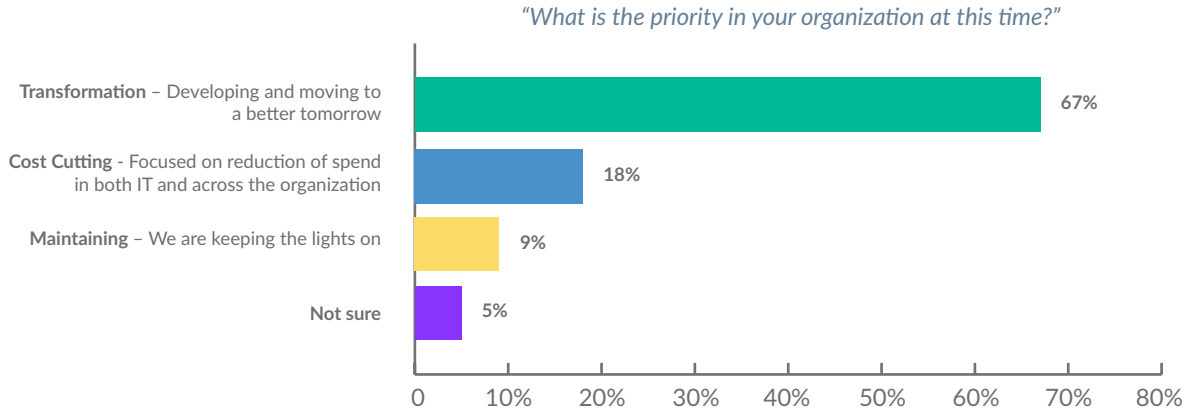
The research begins with getting a perspective of the corporate environment. Considering both those head winds and tail winds within corporation technology, perspectives, history and future.

"What is the priority in your organization at this time?"

No matter what an organization's priorities look like from a technology perspective, in 2020 economic it all starts with the financial and business 'priority' as a foundation to consider. The surprise was the overwhelmingly positive view of 'transformation' (67%) as the current state and way forward.

Where this becomes more enlightening is when we look at it by industry.

We quickly see compared to the overall averages, retail (100%) and banking (75%) are in the best position as they look to focus on 'transforming' while manufacturing (35%) and government/education (25%) are focused on cost cutting. While energy (67%) and healthcare (25%) are just maintaining their status quo.

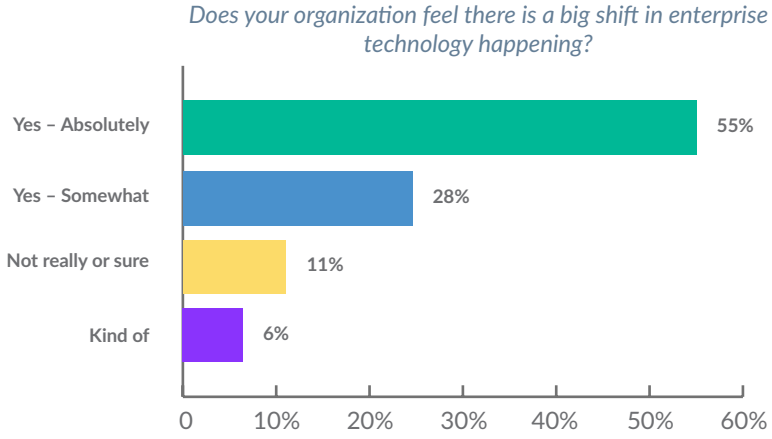


Industry	Transformation – Developing and moving to a better tomorrow	Cost Cutting - Focused on reduction of spend	Maintaining – We are keeping the lights on
Banking	75%	0%	0%
Energy	33%	0%	67%
Govt/Ed	75%	25%	0%
Health	75%	0%	25%
Insurance	71%	18%	12%
Manufacturing	52%	35%	9%
Retail	100%	0%	0%
Services	73%	14%	5%
Technology	71%	14%	14%
Grand Total	**67%**	**18%**	**9%**

"Does your organization feel there is a big shift in enterprise technology happening?"

Building on the perspective of investment, the next question focuses on the trends in technology.

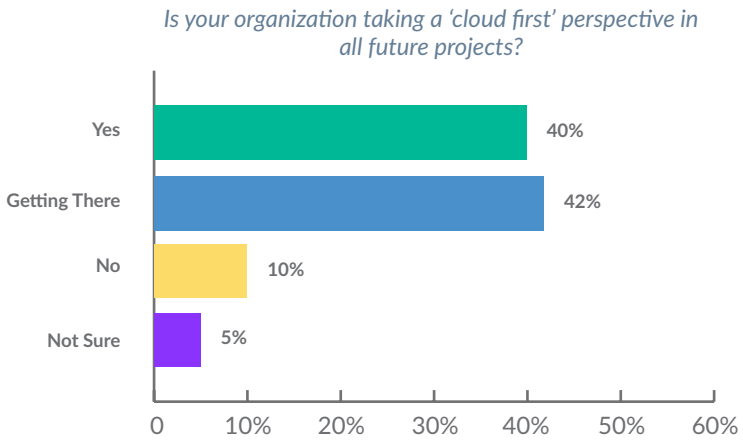
With over 80% agreement, this confirms the perspective that there is this grand effort by everyone to 'transform' and it can only happen with a change in how technology is engineered, utilized, maintained and procured.



"Is your organization taking a 'cloud first' perspective in all future projects?"

The 'cloud' is not new. Nearly every organization has moved their email and collaboration to a subscription service (i.e. Microsoft Office 365), the utilization of data driven platforms is growing dramatically (i.e. Salesforce, Workday, ServiceNow) and corporate websites are now all cloud based.

What about a mindset around all 'next projects' beginning with a subscription outside the datacenter? That is where 'Cloud First' is the priority.



Industry	Percentage Yes
Banking	78%
Energy	67%
Govt/Ed	88%
Health	100%
Insurance	89%
Manufacturing	83%
Retail	100%
Services	68%
Technology	100%
Grand Total	82%

When broken down by industry, the percentages that stated the affirmative ('YES' or 'GETTING THERE') versus the negative or uncertain answers ('NO' or 'NOT SURE') are clear. Industries like insurance, retail, technology and healthcare show a greater propensity to pivot compared to banking, energy and business services.

As we look to utilize new platforms, there are those legacy technologies that are maintained in the corporate data center. These technologies – along with their associated costs and maintenance – were the focus of the next research questions.

"Can you think of technologies in your data center that should be retired?"
And
"Do you think there is wasted money in keeping old tech alive in your organization?"

We asked about waste in two ways – "is there technology that should be retired" and "do you think there is wasted money in keeping old tech alive"?

The broad belief is there is technologies running in data centers that should be removed (68% 'YES'). What is also worth calling out is how only 10% of the responses say 'NO'.

But that is looking at the issue from a technology perspective – what about the financial burden? More telling is the question relating to the waste of money. While 83% say 'YES', 25% say this waste is significant.

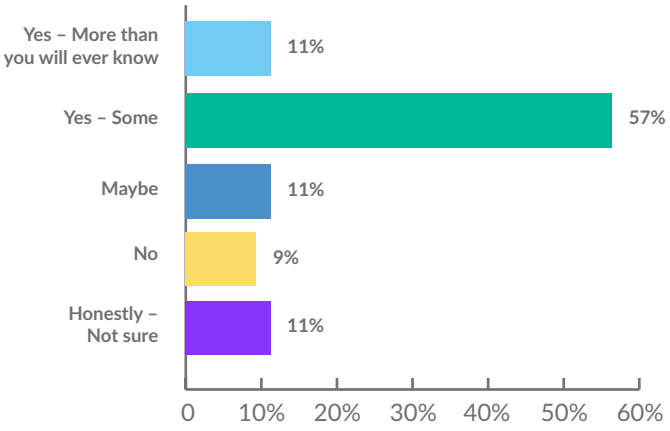
Gartner states in their "10 Rules for Rapid IT Spend Reduction[4]", one of the four top means of saving around infrastructure is 'Decommission underused assets'.

This plays into another tactic where Gartner discusses 'renegotiating or terminating' relations. If you remove the technology, you have that option.

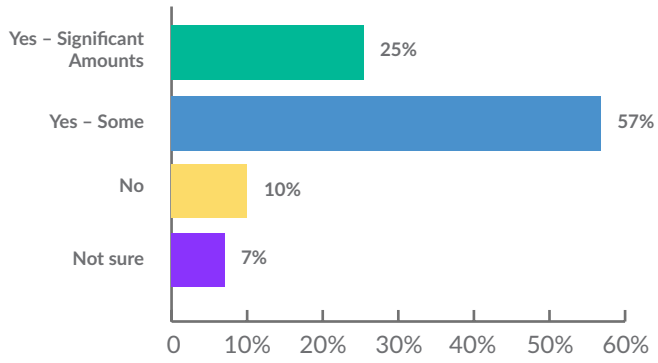
Other considerations:

1. Maintenance and licensing
2. SME cost and reliance
3. Infrastructure and data center costs
4. Compliance and security

Can you think of technologies in your data center that should be retired?



Do you think there is wasted money in keeping old tech alive in your organization?



[4] https://www.gartner.com/doc/reprints?id=1-1YP7E3EJ&ct=200331&st=sb

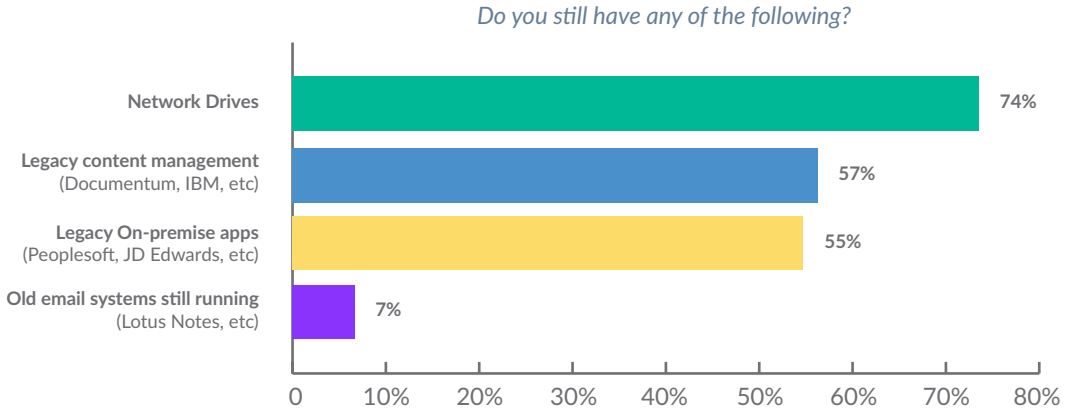
"Do you still have any of the following legacy technologies?"

When asked what 'legacy' technologies are still running within their organization, the responses were both large and mixed.

Since the advent of open systems computing in the 1990s[5], the idea of 'legacy' was the batch-based mainframe technologies. What has become reality are these platforms implemented in the last 20 years are the 'new mainframes' with their real-time processing architectures and complex layers (operating system, database, application servers, web servers, etc). What is most interesting is the stickiness of network drives[6] – those 'Z' drives that people can copy, paste and search using their computers. 74% of the responses stated their use. This could also include the use of cloud-options for enterprise-file-sync-share (EFSS).

Consider these facts. Basic network drives lack granularity around:

- **Security** – Controlling what someone can see – and not see.[7]
- **Metadata** – there is little-to-no searchable data about files put on these drives. Do you know what is an important business document versus someone's wedding pictures?
- **Retention** – you cannot granularly control what is deleted, by whom and why. In legal circles, that is called 'Defensible Deletion'[8].
- **Viewers** – To open a file, you need the technology on your desktop to view it.
- **Compliance/Governance** – The need to systemically and consistently maintain a compliant store is difficult with a network drive. How do you respond to a consumer based on government regulations like the California Consumer Protection Act[9] or HIPPA[10]?



[5] https://en.wikipedia.org/wiki/Open_system_(computing)
[6] https://en.wikipedia.org/wiki/Shared_resource
[7] https://digitalguardian.com/blog/what-file-sharing-security
[8] https://blog.specialcounsel.com/ediscovery/defensible-data-deletion-strategy-basics/
[9] https://en.wikipedia.org/wiki/California_Consumer_Privacy_Act
[10] https://www.hhs.gov/hipaa/index.html

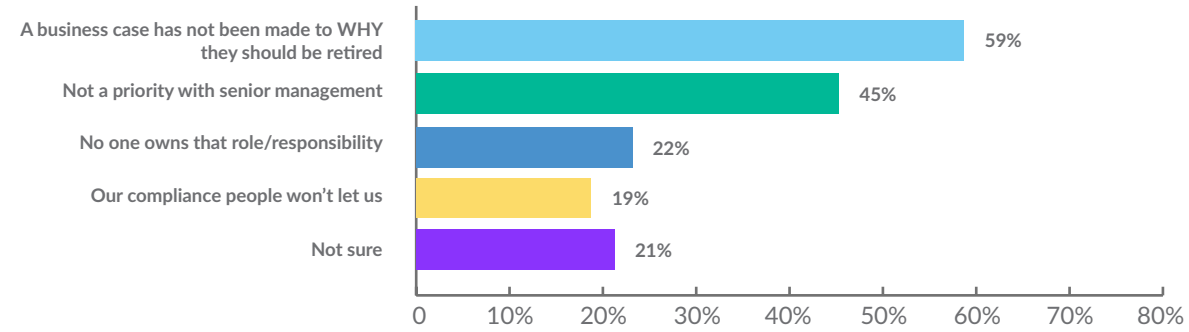
"Why do you think older systems are still running in your organization?"

WHY these older systems are still operating? That is a natural progression to the conversation based on the sum of answers to this point. Responders were allowed to select multiple reasons.

It is apparent this is not so much a legal issue (19%) but a business and prioritization issue. Just as important to ask within the organization is WHY. 21% are not sure why old technology still operates which infers more analysis.

Because it is perceived as a short-term problem, most organizations do not assign anyone to the effort (22%). Gartner's Andy Kyte states "CIOs and application leaders need to rethink the process of decommissioning applications."[11] Gartner further recommends an 'application undertaker' be assigned to the effort.

Why do you think older systems are still running in your organization?



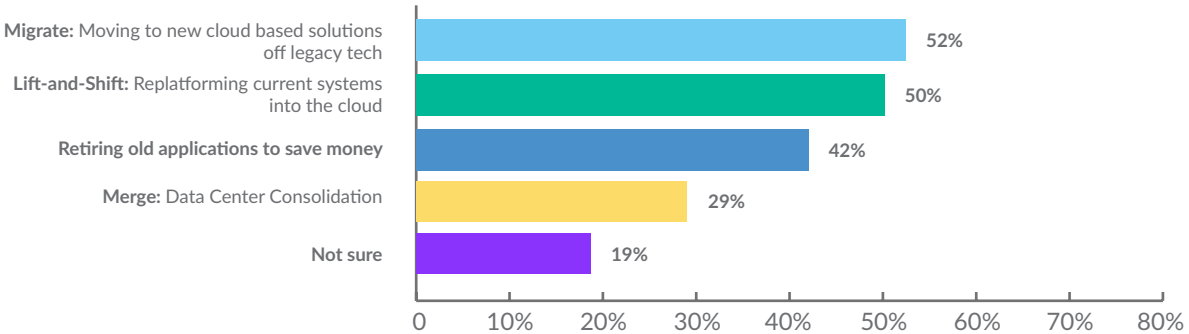
"Which of these are happening in your organization over the next 12 months?"

The research wanted to not just focus on the past and current state of technology but take an outward purview as the global economic crisis is in full effect. When asked about the next 12 months the plans within an organization, the answers show there is a 'grand pivot' to move workloads to cloud (over 50%).

There is a perception that the act of 'consolidating data centers' is for the largest of corporations. In reality, 38% of the responders that stated the plan to consolidate were organizations less than $2 billion in revenues and over 62% were in less than $5B.

If the bottom 'Not Sure' (19%) is factored this pivots the story more towards cloud such as, merging of facilities, cost cutting, and retirement of legacy applications.

Which of these are happening in your organization over the next 12 months?



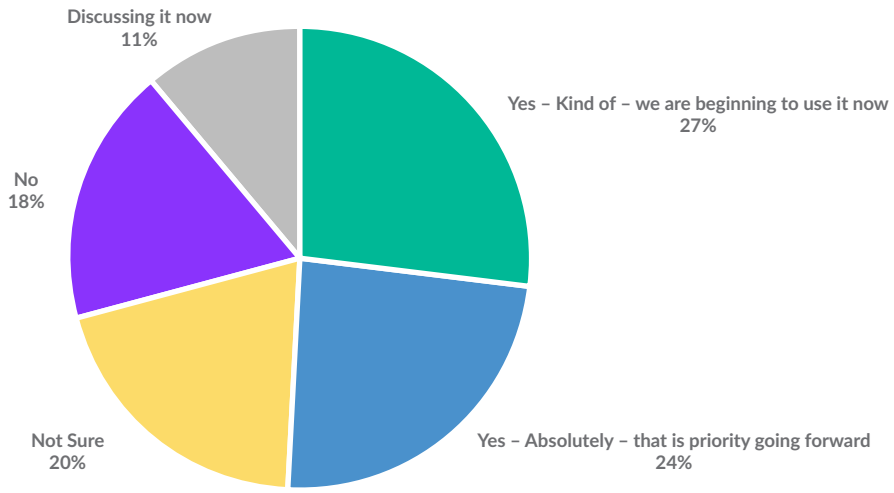
[11] https://www.gartner.com/smarterwithgartner/appoint-an-undertaker-to-decommission-applications/

"Do you have an open-source technology strategy (operating systems like Linux, database like Postgres, tools, etc.)?"

As we looked at 'cloud' as a direction for organizations to 'transform', there is another move taking place around utilization of open-source technology[12]. Technology that;

- Evolved out of an open community of participants
- With an open licensing model
- Completely transparent source code and access
- Shared across a vendor community

Do you have an open-source technology strategy
(Operating systems like Linux, database like Postgres, tools, etc)?



Primary examples that have crossed into mainstream computing include:

- **Operating System - Linux**[13] – examples include Red Hate, Ubuntu, Fedora, CentOS.
- **Database - Postgres**[14] – examples are EnterpriseDB, Microsoft Azure, Google.
- **Programming – Python**[16] - According to IEEE, it was the most popular languages in the world.
- **Websites – Wordpress**[18] - one of the world's most popular blogging and web content management systems.

[12] https://en.wikipedia.org/wiki/Open-source_software
[13] https://en.wikipedia.org/wiki/List_of_Linux_distributions
[14] https://www.postgresql.org/
[15] https://www.enterprisedb.com/
[16] https://www.python.org/
[17] https://spectrum.ieee.org/static/interactive-the-top-programming-languages-2019
[18] https://wordpress.com/

Company Size	Yes	No	Not Sure
Less than $2B	50%	28%	0%
$2B to $5B	65%	18%	18%
$5B to $15B	52%	18%	18%
Greater than $15B	42%	12%	38%
Grand Total	**51%**	**18%**	**20%**

A key take-away is the sum of those who chose 'YES'. The total is over 60% - with close to 25% stating it is a 'way forward' in their utilize of enterprise computing software. Over the next 12 months it would be interesting to see how many of those 'Not Sure' (20%) turn into a 'YES'.

Where this becomes more apparent is from a company size and industry.

From an industry perspective, it is clear technology-centric firms are very accepting of open-source technologies. On the other side of the spectrum is the low degree of positive response from government, manufacturing and service firms (based on the sum of the 'No' and 'Not Sure' responses).

From a company size perspective, the most notable is the larger the organization, the less likely the acceptance of an open-source technology.

Industry	Yes	No	Not Sure
Banking	60%		10%
Energy	67%		33%
Govt/Ed	38%	25%	38%
Health	50%	25%	25%
Insurance	75%	13%	13%
Manufacturing	30%	30%	22%
Services	33%	24%	29%
Technology	100%	0%	0%
Grand Total	**51%**	**18%**	**20%**

SYNOPSIS

Certain facts came to light from this research that need to be summarized and called out. That includes:

1. Corporate desires to 'transform' are a priority (67%) – even during an economic slowdown. While there are signs of cost-cutting, many industries are accelerating their move away from stoic technologies to drive nimbleness and agility.
2. 90% of the responses affirmed there is a 'big shift' in technology right now and the need to utilize it is happening right now – chasms are being crossed.
3. There is a perceived "waste of money" within legacy technologies in organizations (75%) with more than 50% of firms still running old 20+ year architected applications, complex content systems and almost 75% using network drives creating a bigger 'data swamp'.
4. A lack of business cases (47%), management priority (40%) and uncertainty in WHY this is happening (34%) is creating a "logjam" in addressing the problem.
5. All the while 'cloud first' (90%) is the direction and 'open-source technology' (60%) is the way forward.
6. Finally, application retirement (42%) and data center consolidations (29%) are a major priority over the next 12 months.

The morale to the story is "**As we need to transform, we need to save money**". Gartner is stating "Worldwide IT spending is projected to total $3.5 trillion in 2020, a decline of 7.3% from 2019" because of the global economic is "...expected to witness a 'swoosh' recovery with IT spending will experience more of a 'swoop' recovery."[19] This means the real economic value of Moore's Law is truly beginning to take hold as this empowers (1) cloud is cheaper than on-prem, (2) open-source is powerful enough to subjugate the expensive, legacy players and (3) technology has evolved where faster evolution to end-users and customers is the 'new normal'.

TOP 5 THINGS YOU SHOULD KNOW

No matter corporate size or industry, there is an opportunity to do both – transform and cut costs. Targeting that first-success to

1. Assess- measure and decide what the business case is to save money and simplify business with prioritizations and readiness.
2. ROI- setting up a measurable ROI methodology that you can self-fund transformation and decommissioning
3. Take advantage of open-source the right way – where there is proper enterprise support.
4. Utilize 'cloud' to allow that financial and technical nimbleness. No matter where the 'compute' is housed allows for flexibility and maintainability.
5. Educate and Adjust your staff to the new technologies. Most are evolutions – not revolutions – of technology they already know.

[19] https://www.gartner.com/en/newsroom/press-releases/2020-07-13-gartner-says-worldwide-it-spending-to-decline-7-point-3-percent-in-2020

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