



NATIONAL
MULTIFAMILY
HOUSING
COUNCIL



ONE11
ADVISORS

SURVEY REPORT | NOVEMBER 2020

The NMHC/ One11 Advisors Apartment Industry Technology Benchmarking Report

APARTMENT LEADERSHIP RESIDES HERE™

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The information provided herein is general in nature and is not intended to be legal advice. It is designed to assist our members in understanding this issue area, but it is not intended to address specific fact circumstances or business situations. For specific legal advice, consult your attorney.

About NMHC

Based in Washington, DC, the National Multifamily Housing Council (NMHC) is a national association representing the interests of the larger and most prominent apartment firms in the U.S. NMHC's members are the principal officers of firms engaged in all aspects of the apartment industry, including ownership, development, management and financing. NMHC advocates on behalf of rental housing, conducts apartment-related research, encourages the exchange of strategic business information, and promotes the desirability of apartment living. Nearly one-third of Americans rent their housing, and almost 15 percent live in an apartment (buildings with five or more units). For more information, contact NMHC at 202/974-2300, email the Council at info@nmhc.org or visit NMHC's website at www.nmhc.org.

About One11 Advisors

One11 Advisors is an integrated professional services firm acquired by Altus Group on July 2, 2019. They provide advisory and managed services for multifamily and commercial real estate organization's front to back office strategies, processes and technology. Their team of industry experts bring market experience and leverage years of experience to deliver innovative proven solutions to their clients. "More than just consultants", their advisor teams consist of experienced professionals who have successfully worked in leadership positions within real estate organizations. From strategy development to implementation to training and support, they have a unique 360-degree perspective of real estate with a deep understanding of both the business and technology solutions. For more information visit their website at www.One11Advisors.com or speak to one of their experts at 866.726.6311.

Overview

In partnership with One11 Advisors, the National Multifamily Housing Council (NMHC) conducted a survey of all NMHC member apartment companies in September and October of 2020 seeking input from their company technology leaders. The survey sought to fill a void in information relating to numerous technology related issues that both NMHC and One11 believe would provide valuable insights to both apartment companies and the technology suppliers that support the apartment industry.

As the leading trade association for the larger apartment companies in the U.S., NMHC seeks to assure that the apartment industry is well-positioned to fully reap the benefits of advances in technology and innovation. With seemingly exponential growth in new technologies, such as artificial intelligence, home automation, blockchain and other revolutionary new tech that have the potential to create efficiencies and savings for the industry, NMHC hopes to assure that an ecosystem exists that allows the industry to simply and seamlessly exploit the opportunities provided by existing and exciting new technology and innovation.

An important building block in support of that goal is a baseline understanding of how apartment companies are supporting technology and innovation in their companies, as well as what challenges and opportunities they face as they deploy technology more extensively in to company systems. Seemingly mundane information such as reporting structures actually provide valuable insights into how technology is treated at the company level. The role technology professionals play in companies throughout the world of business has evolved. From their initial role as the supporter of company email systems, servers and computers, to key C-Suite players, setting and executing company strategy, the job has evolved significantly at companies with the size and resources to support the evolution.

One goal of this survey and other educational efforts is to assist in that evolution by providing data that highlights best practices and allows organizations to evolve their technology capabilities regardless of their size or resources. More specifically, the overall goals for this, the first NMHC-One11 Advisors Technology Survey, are to:

- Provide the apartment industry with basic benchmarks for technology staffing, reporting structure, and the use of contracted employees and consultants.
- Assess the how the industry is addressing the recent expansion of innovative new technology products and technology-enabled services and highlight the challenges to adoption of new tech and innovation.
- Assess satisfaction and challenges with industry property management systems.
- Determine how effectively the industry is addressing cybersecurity issues and highlight best practices for keeping companies safe.

- Review how telecom and connectivity is addressed at apartment companies as well as how this area is evolving with the deployment of new technology, including smart home devices.
- Gather information on the leading challenges and opportunities that technology professionals are facing today.

In general, the survey hopes to provide a snapshot of the many ways that technology is being addressed at apartment companies of different sizes. It's hoped that the information will provide a roadmap for all companies to create an internal ecosystem that helps them best take advantage of the opportunities provided by technology, while mitigating the risks.

Methodology

As stated above, NMHC sent a digital survey to all of its apartment company members seeking information on how they address technology in their companies as well as the challenges and opportunities they face in their positions as industry technology leaders.

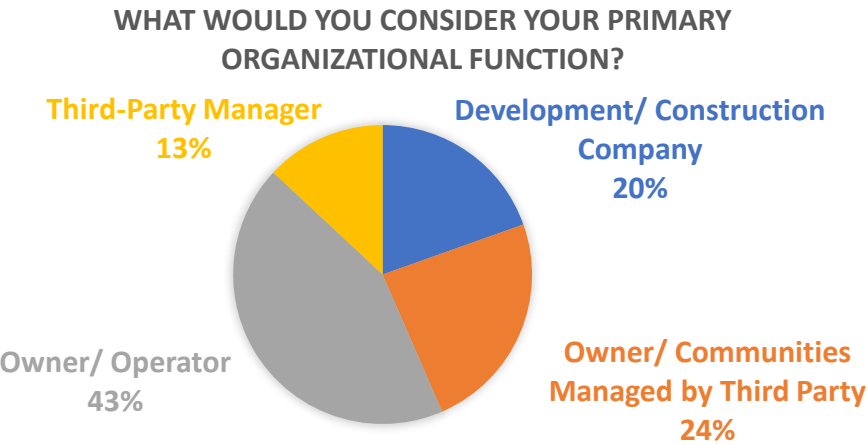
The survey was created with input from the NMHC Systems Technology and Information Management Committee, One 11 Advisors staff and NMHC staff. Responses were received from 46 apartment company technology leaders from companies with portfolios ranging from 100 to over 100,000 apartment units. The 46 companies own or manage 1,381,860 apartment units.

For the purposes of analysis, a determination was made to cut the data in to smaller, medium-sized, large and largest companies. Smaller companies were defined as companies with 100 to 10k units, medium sized companies were defined as companies with 10k to 25k units, and large companies were defined as companies with 25k to 60k units, and the largest companies were defined as having over 60k units. This decision was made based upon naturally occurring breaks in the data and through use of the NMHC 50 report as a guide.

The range of companies in the NMHC top 50 is from roughly 30k to almost 500k at the high end. The mid-point for companies in the list is roughly 50k to 60k. So a rough explanation for the decision is that if a company made the top 50 list or were roughly just below the cut-off, they were considered a large company, and the companies that were in the upper half of the list, above 60k units were considered the largest companies.

While quotes from survey respondents are included in the survey report, none are attributed. All data is aggregated to preserve the confidentiality of the respondent. The company size categories were created to be large enough to not be able to determine the companies in the profile. No personal information from any respondent is disclosed in the survey report.

Demographics and Company Profile

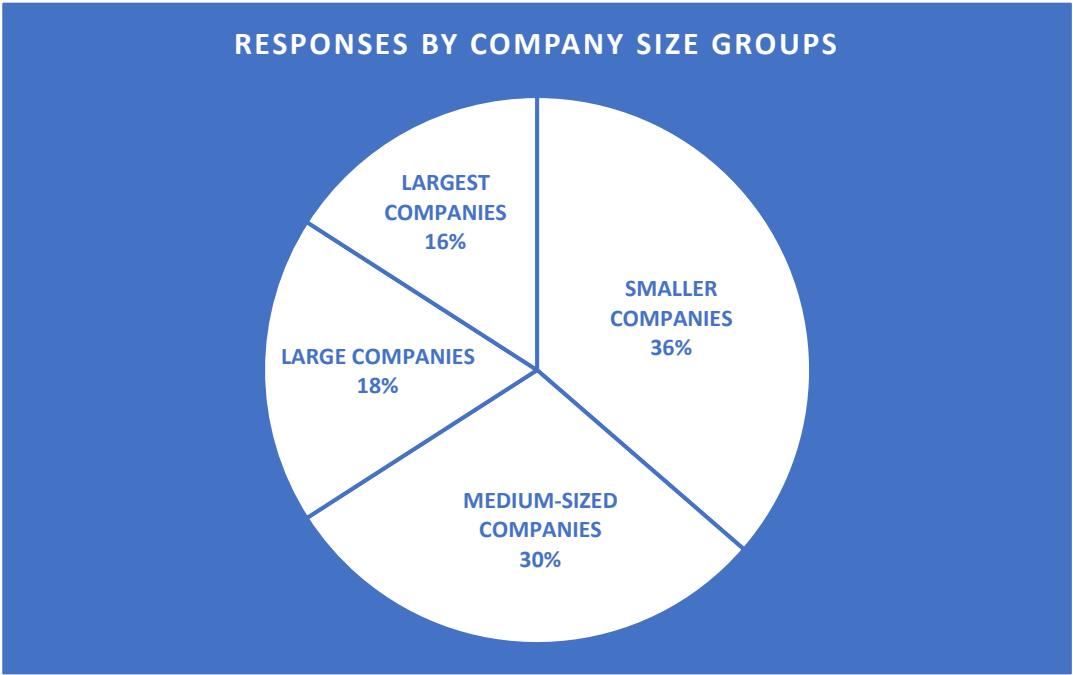
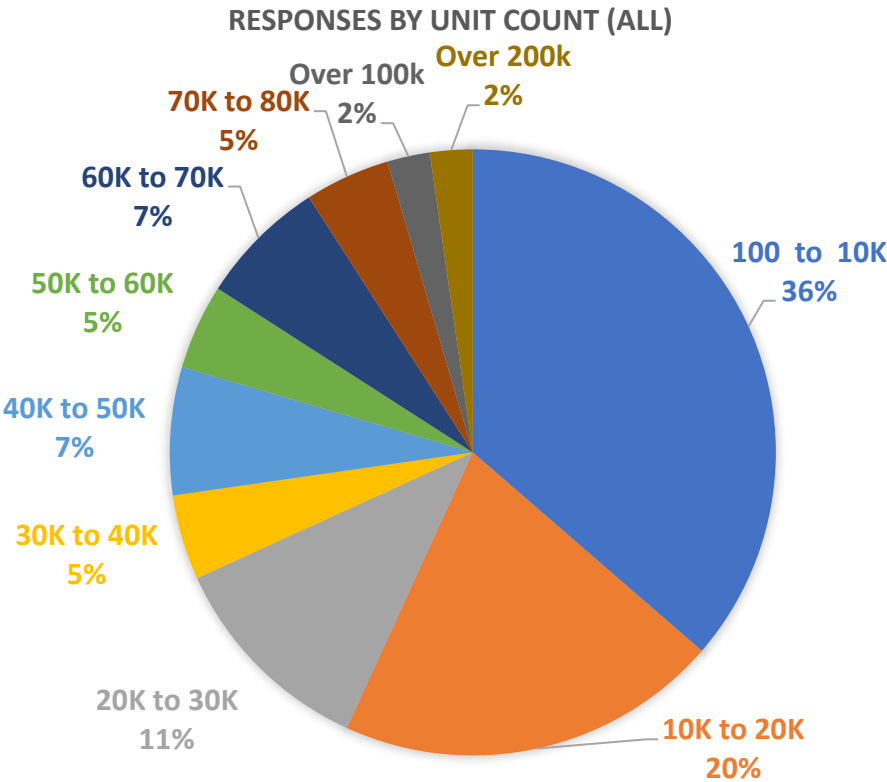


WHICH OF THE FOLLOWING DESCRIBES YOUR COMPANY TYPE?
(INCLUDES ALL FUNCTIONS, NOT JUST THEIR PRIMARY FUNCTION)

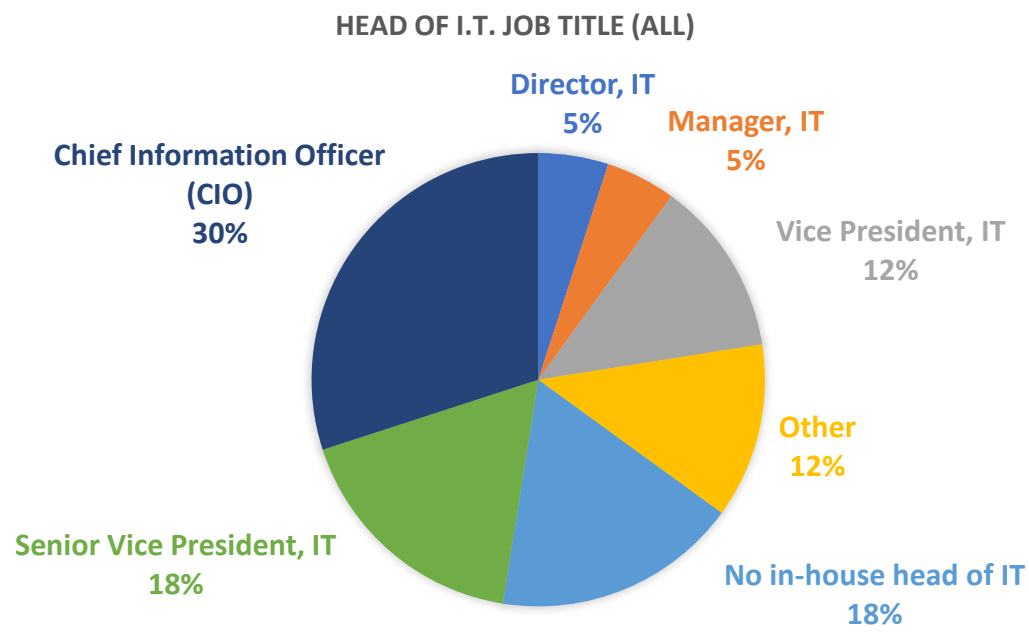
Owner Operator	32
Development/ Construction	28
Third Party Manager	14
Owner/ Communities Managed by Third Party	14
All Four Company Types	14

Portfolio Type

100% Market Rate	20
Over 50% of Portfolio in Affordable Housing	5
Some Affordable Housing in Portfolio	19
Over 50% of Portfolio in Student Housing	1
Some Student Housing in Portfolio	11
Some Active Adult/ Senior Housing	11
Some Military or Other Housing	4

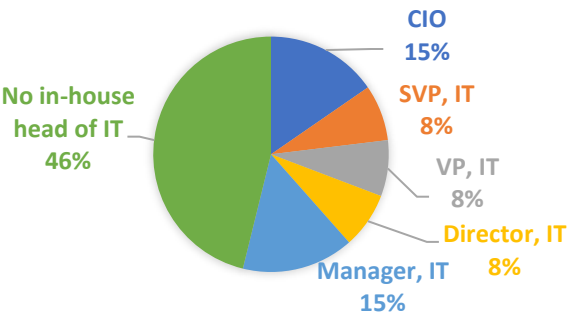


Reporting and Allocation of I.T. Resources

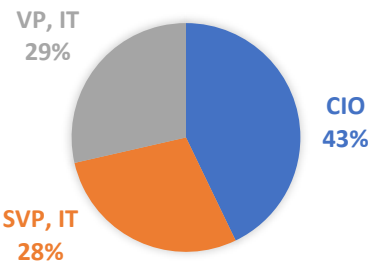


LEGEND FOR COMPANY SIZE CHARTS THROUGHOUT REPORT	
Smaller Companies	100 to 10K units
Medium-Sized Companies	10K to 25K units
Large Companies	25K to 60K units
Largest Companies	More than 60K units

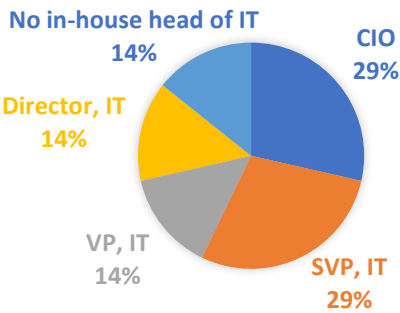
HEAD OF I.T. JOB TITLE:
SMALLER COMPANIES



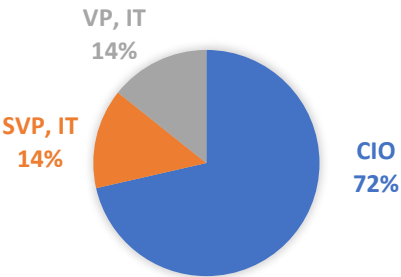
MEDIUM-SIZED COMPANIES



LARGE COMPANIES



LARGEST COMPANIES



OTHER HEAD OF I.T. TITLES

Chief Financial Officer
Chief Technology Officer
Enterprise Business Solutions Manager
Vice President, Business Solutions

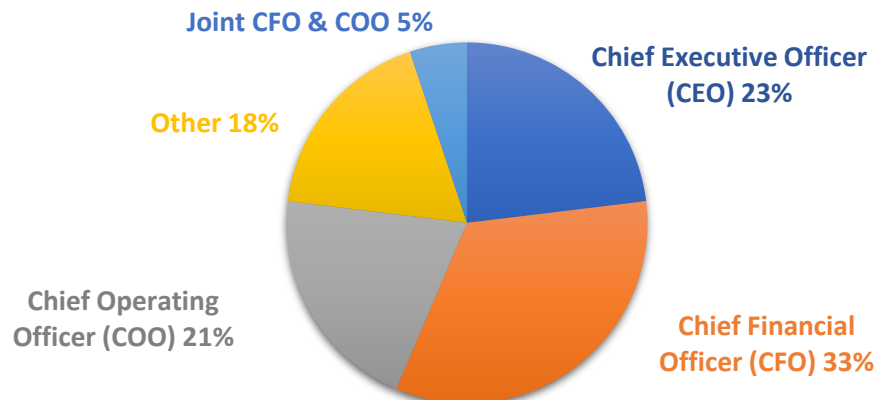
AVERAGE NUMBER OF COMPANY EMPLOYEES (ALL DEDICATED TO MULTIFAMILY)

Chief Information Officer	2,561
Senior Vice President, Information Technology	995
Vice President, Information Technology	1,136
Director, Information Technology	609
Manager, Information Technology	48
No In-House Head of Information Technology	122

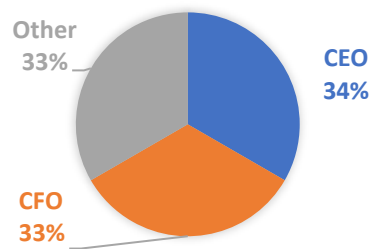
AVERAGE NUMBER OF UNITS PER JOB TITLE (ALL)

Chief Information Officer	57,142
Senior Vice President, Information Technology	29,537
Vice President, Information Technology	36,251
Director, Information Technology	26,500
Manager, Information Technology	3,606
No In-House Head of Information Technology	6,006

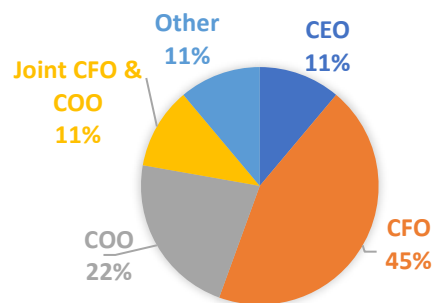
TO WHOM DOES THE HEAD OF I.T. REPORT? (ALL)



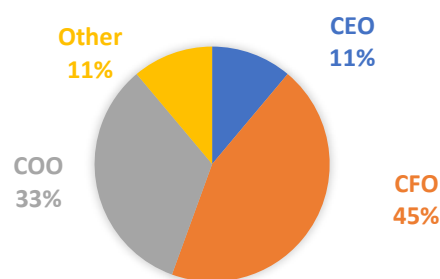
TO WHOM DOES THE HEAD OF I.T. REPORT?
SMALLER COMPANIES



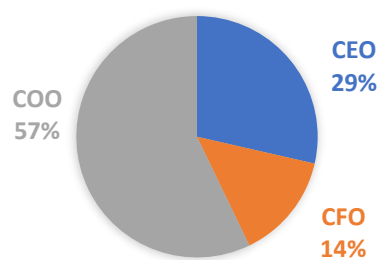
MEDIUM-SIZED COMPANIES



LARGE COMPANIES



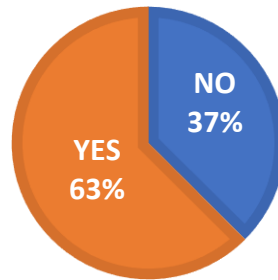
LARGEST COMPANIES



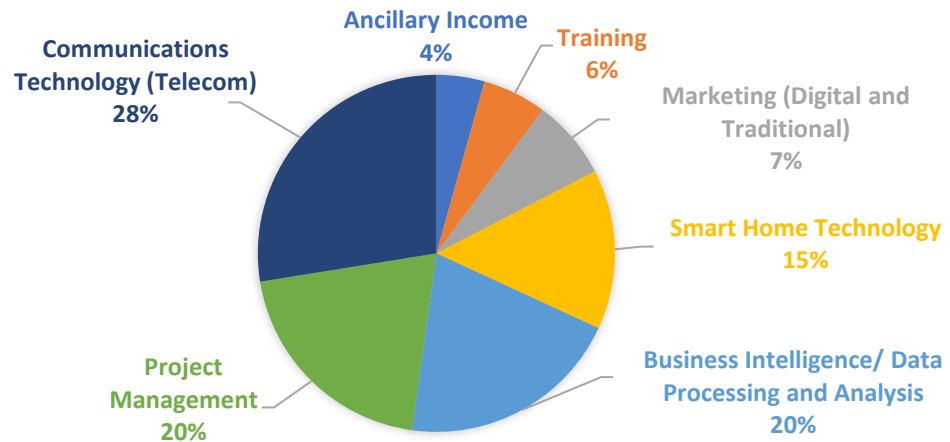
OTHER RESPONSES

President
Partners
Principal
Vice Chairman

IS THE HEAD OF I.T. RESPONSIBLE FOR OTHER BUSINESS FUNCTIONS BEYOND BASIC I.T.? (ALL)



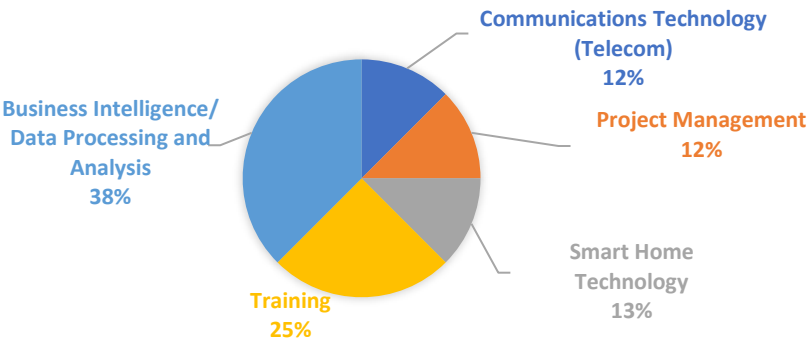
ADDITIONAL RESPONSIBILITIES OF HEAD OF I.T. (ALL)



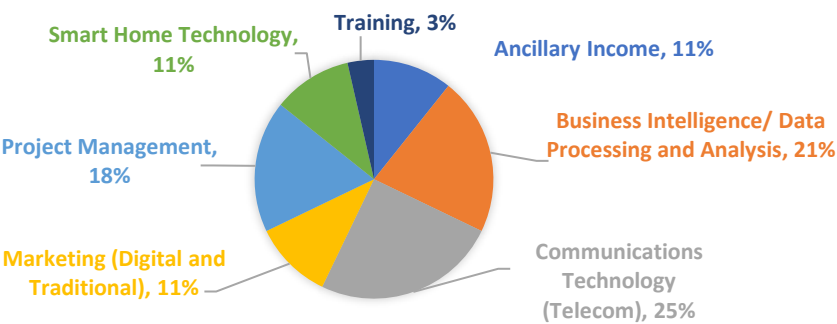
OTHER RESPONSES

Contact Center and Help Desk
Data Privacy
Mobile Device Management
Record Retention
Revenue Management
Software and Web Development

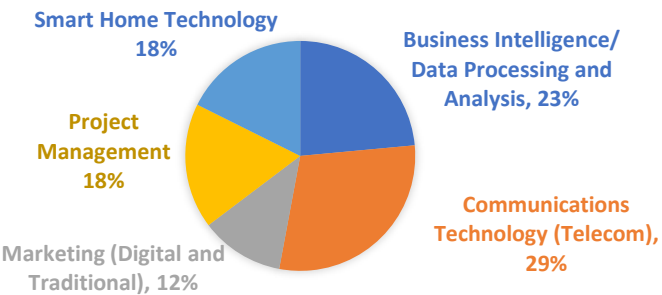
ADDITIONAL RESPONSIBILITIES OF HEAD OF I.T.
SMALLER COMPANIES



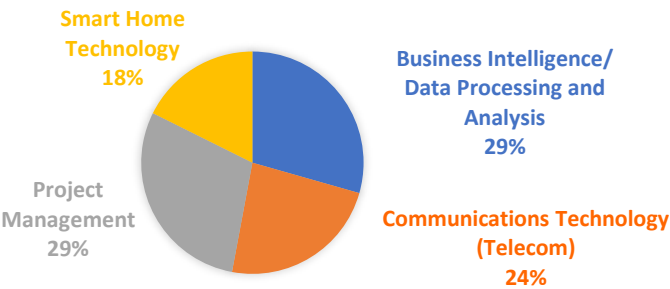
MEDIUM-SIZED COMPANIES



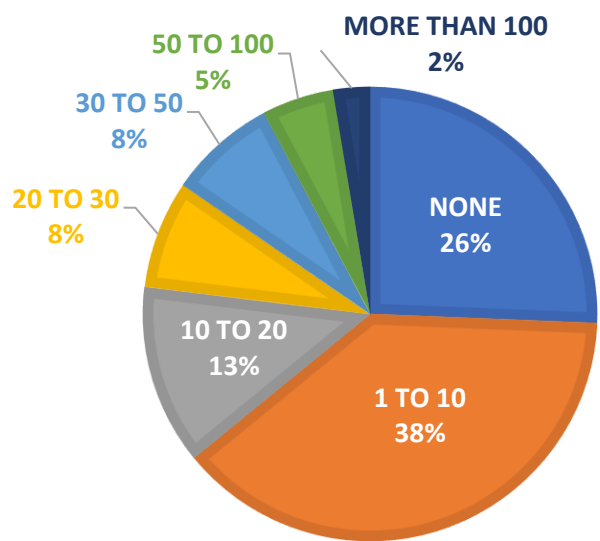
LARGE COMPANIES



LARGEST COMPANIES



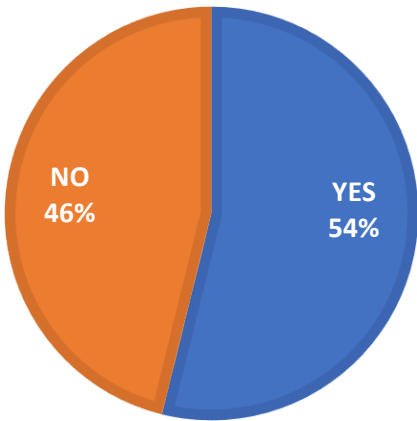
NUMBER OF FULL TIME I.T. EMPLOYEES (ALL)



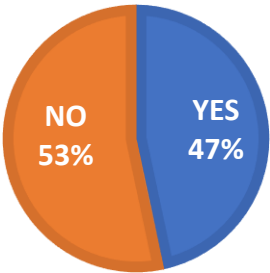
AVERAGE NUMBER OF FULL TIME I.T. EMPLOYEES BY COMPANY SIZE

Smaller Companies (100 to 10k Units)	1.5
Medium-Sized Companies (10k to 25k Units)	7
Large Companies (25k to 60k Units)	20
Largest Companies (More than 60k Units)	29

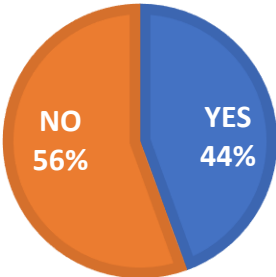
DO YOU HAVE PAID CONTRACT EMPLOYEES TO ASSIST WITH I.T.? (ALL)



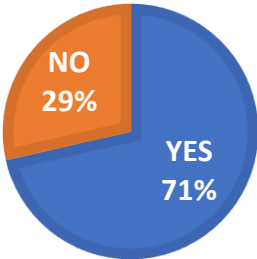
**DO YOU HAVE PAID CONTRACT EMPLOYEES TO ASSIST
WITH I.T.?
SMALLER COMPANIES**



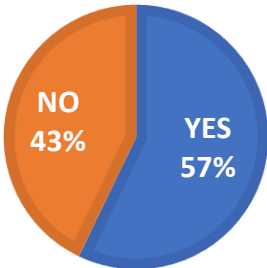
MEDIUM-SIZED COMPANIES



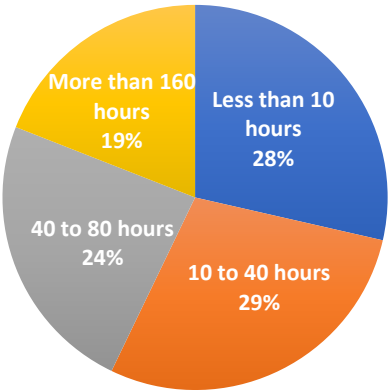
LARGE COMPANIES



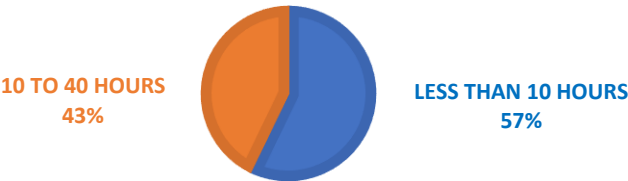
LARGEST COMPANIES



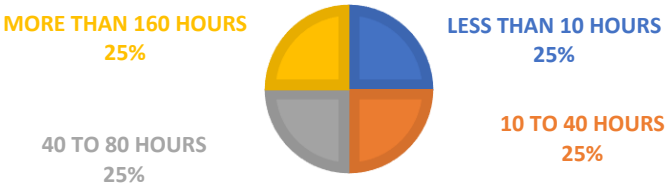
HOW MANY BILLABLE HOURS PER WEEK (ON AVERAGE) DO YOU SPEND
ON CONTRACT I.T. EMPLOYEES? (ALL)



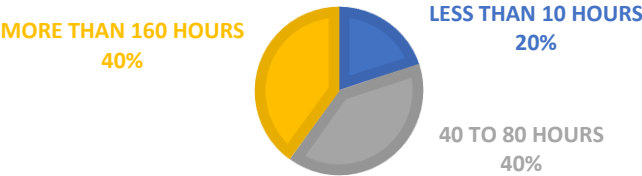
SMALLER COMPANIES



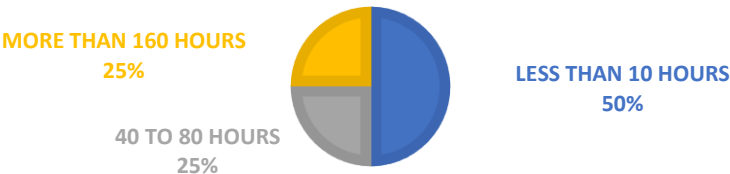
MEDIUM -SIZED COMPANIES



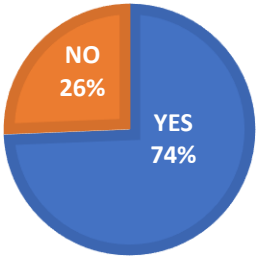
LARGE COMPANIES



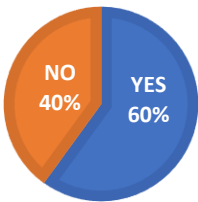
LARGEST COMPANIES



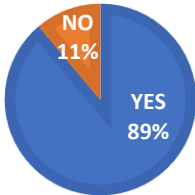
DO YOU OUTSOURCE ANY OF YOUR I.T. FUNCTIONS? (ALL)



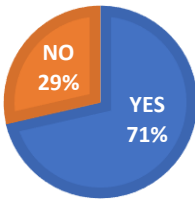
SMALLER COMPANIES



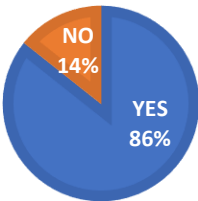
MEDIUM-SIZED COMPANIES



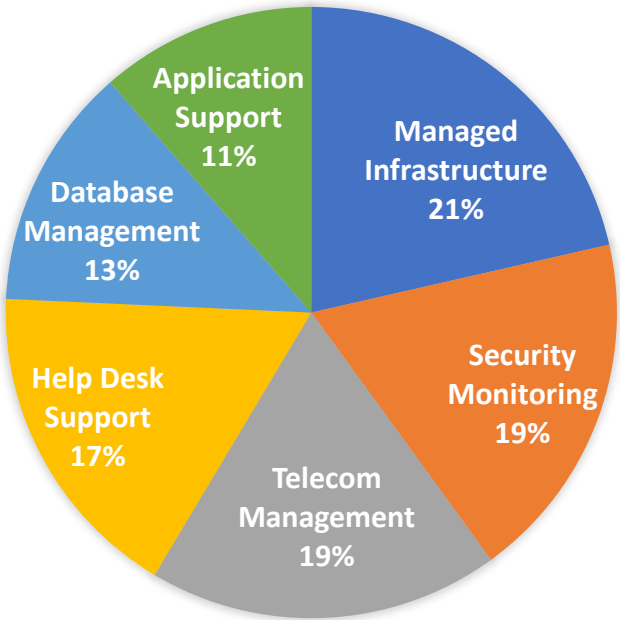
LARGE COMPANIES



LARGEST COMPANIES



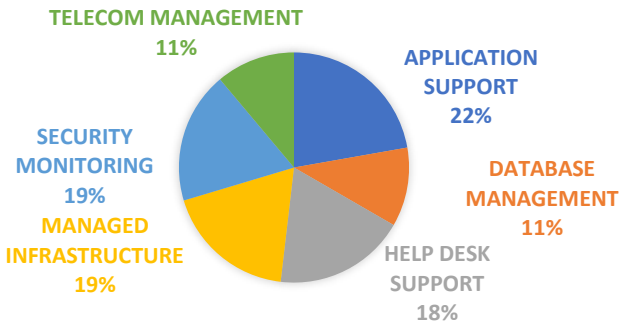
WHAT I.T. FUNCTIONS DO YOU OUTSOURCE? (ALL)



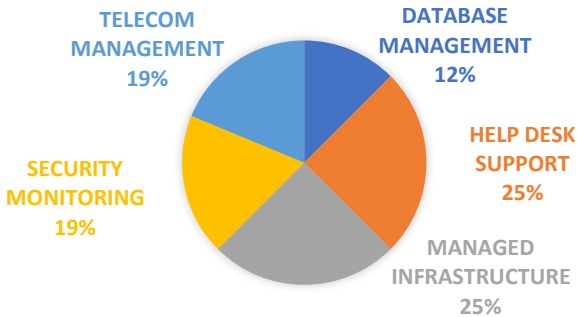
OTHER OUTSOURCE FUNCTIONS MENTIONED

Certain Help Desk Support Tickets
End Point 24X7 Monitoring
SaaS/Cloud Database Management and Operations
Threat Hunting

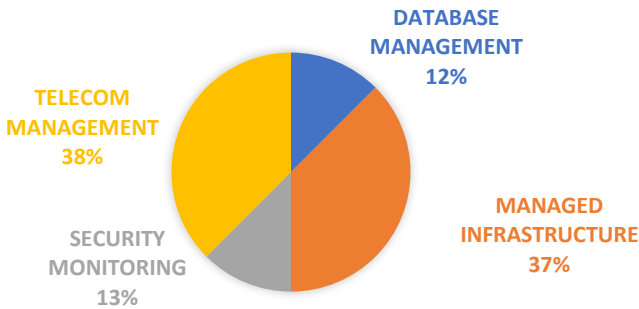
WHAT I.T. FUNCTIONS DO YOU OUTSOURCE?
SMALLER COMPANIES



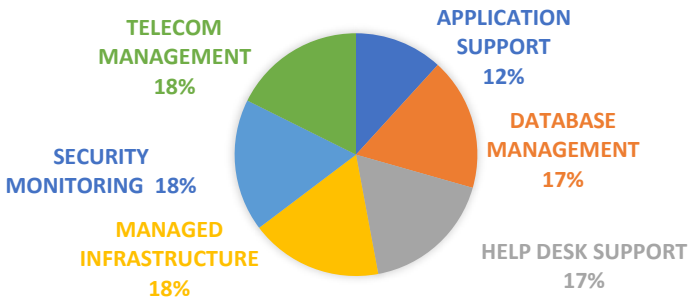
MEDIUM-SIZED COMPANIES



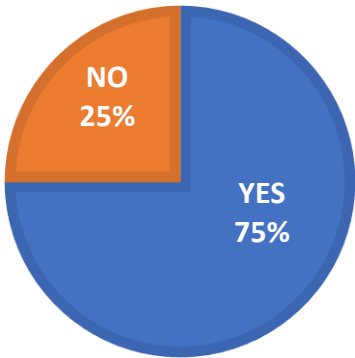
LARGE COMPANIES



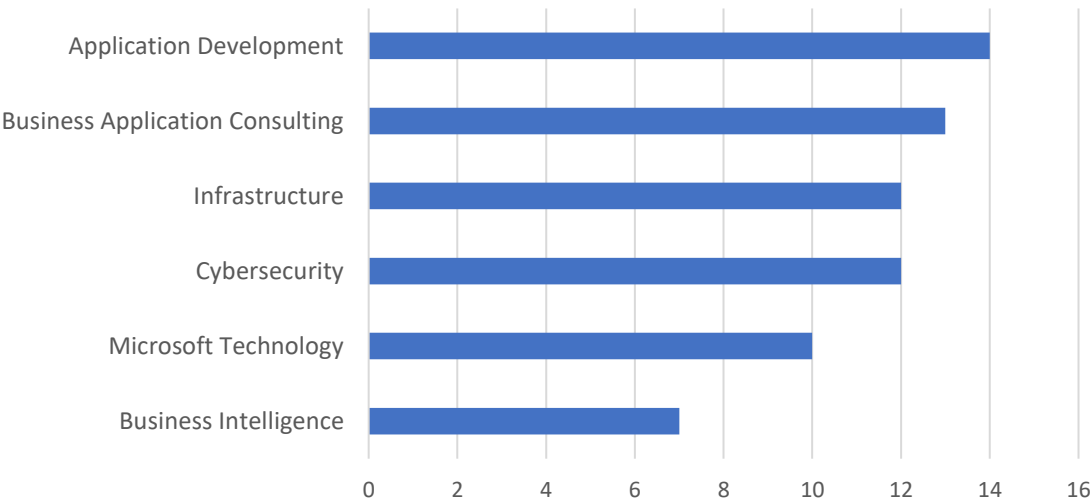
LARGEST COMPANIES



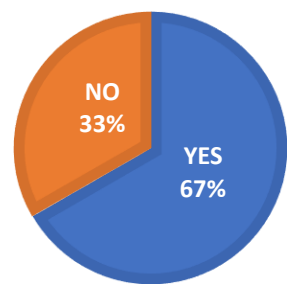
DO YOU USE CONSULTANTS TO HELP SUPPLEMENT
YOUR I.T TEAM? (ALL)



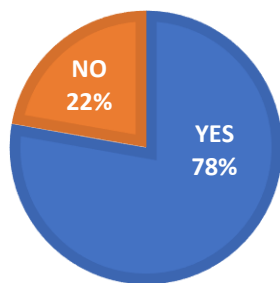
WHAT AREAS DO YOU USE CONSULTANTS TO SUPPLEMENT
YOUR I.T. STAFF? (ALL)



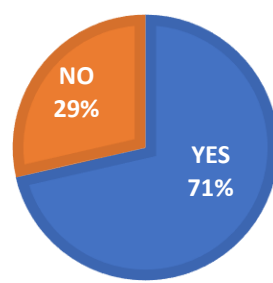
**DO YOU USE CONSULTANTS TO HELP SUPPLEMENT
YOUR I.T. TEAM?
SMALLER COMPANIES**



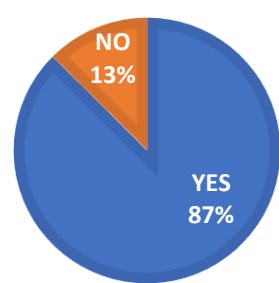
MEDIUM-SIZED COMPANIES



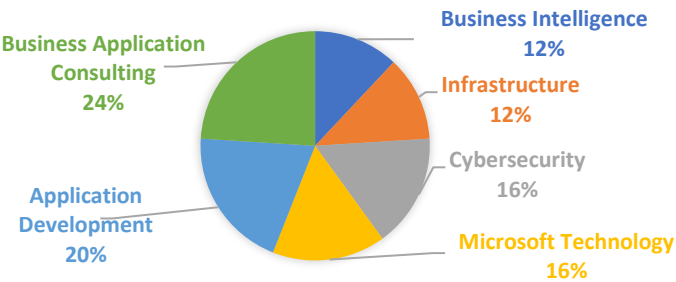
LARGE COMPANIES



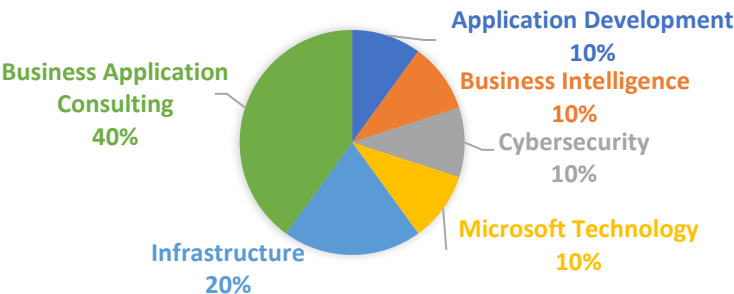
LARGEST COMPANIES



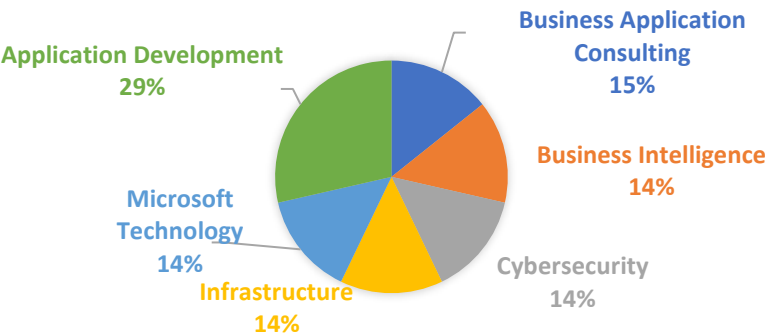
WHAT AREAS DO YOU USE CONSULTANTS TO SUPPLEMENT
YOUR I.T. TEAM?
SMALLER COMPANIES



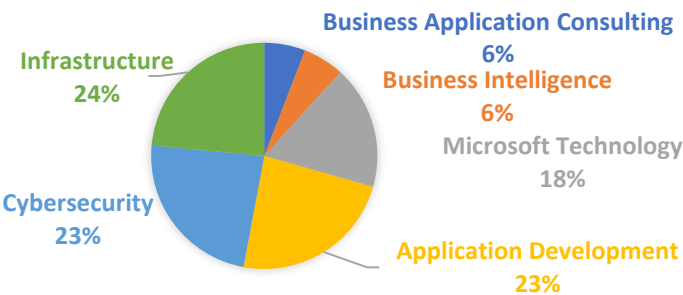
MEDIUM-SIZED COMPANIES



LARGE COMPANIES



LARGEST COMPANIES

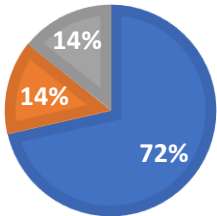


OTHER FUNCTIONS WHERE CONSULTANTS ARE USED

Supplemental Remote Desktop Support
Supplemental Network and Voice Support
Web Development
Digital Transformation
Web Development
Computer Configurations

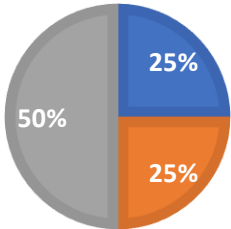
WHAT PERCENTAGE OF YOUR I.T. SPENDING WOULD YOU ESTIMATE IS
OUTSOURCED OR CONTRACTED?
SMALLER COMPANIES

80% TO 100% 60% TO 80% 0% TO 20%



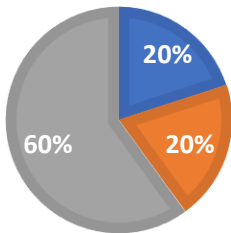
MEDIUM-SIZED COMPANIES

80% TO 100% 60% TO 80% 0% TO 20%



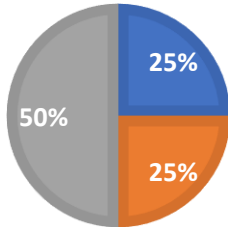
LARGE COMPANIES

80% TO 100% 40% TO 60% 0% TO 20%



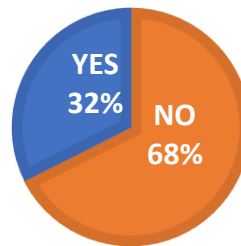
LARGEST COMPANIES

80% TO 100% 40% TO 60% 0% TO 20%

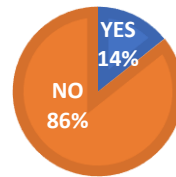


Innovation and Steering Committee

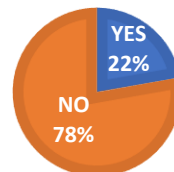
DO YOU HAVE STAFF DEDICATED SPECIFICALLY TO INNOVATION/
VETTING NEW TECHNOLOGY? (ALL)



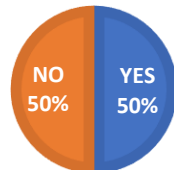
SMALLER COMPANIES



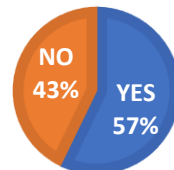
MEDIUM-SIZED COMPANIES



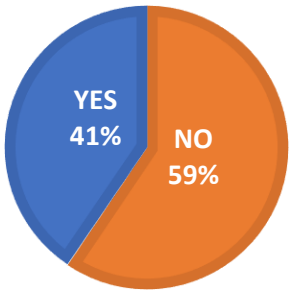
LARGE COMPANIES



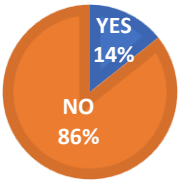
LARGEST COMPANIES



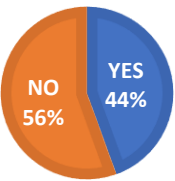
**DOES YOUR COMPANY HAVE A TECHNOLOGY/ INNOVATION
STEERING COMMITTEE? (ALL)**



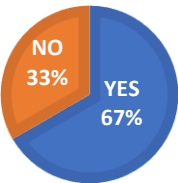
SMALLER COMPANIES



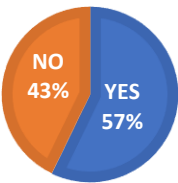
MEDIUM-SIZED COMPANIES



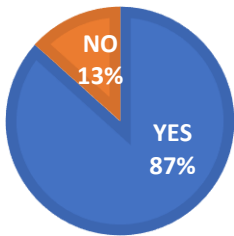
LARGE COMPANIES



LARGEST COMPANIES



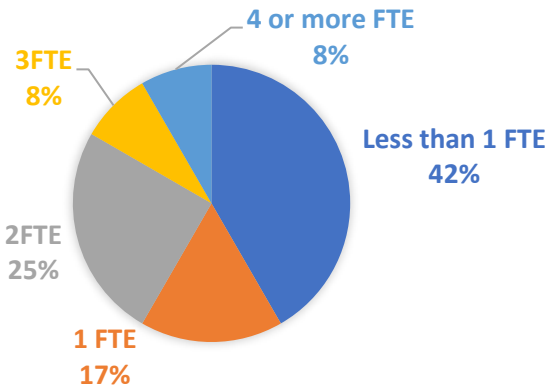
IS I.T. REPRESENTED ON THE INNOVATION COMMITTEE? (ALL)



What is the Usual Role of I.T. on the Innovation Committee?

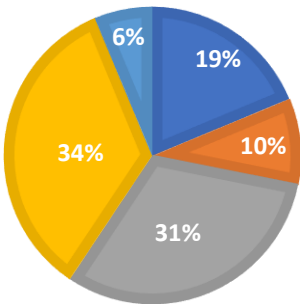
Collaborator with an equal opinion/ vote in the decisions of the committee.	62%
Head of the committee with authority to make final decision/ direction.	31%
Mostly an observer and facilitator, serving as a subject matter expert, but takes direction from the committee.	7%

HOW MANY STAFF DO YOU HAVE DEDICATED TO INNOVATION/ NEW TECH?



WHAT PERCENT OF I.T. RESOURCES ARE ALLOCATED TO DRIVING GROWTH-INNOVATION-NEW TECHNOLOGY? (ALL)

40 to 50% 30 to 40% 20 to 30% 10 to 20% 0 to 10%

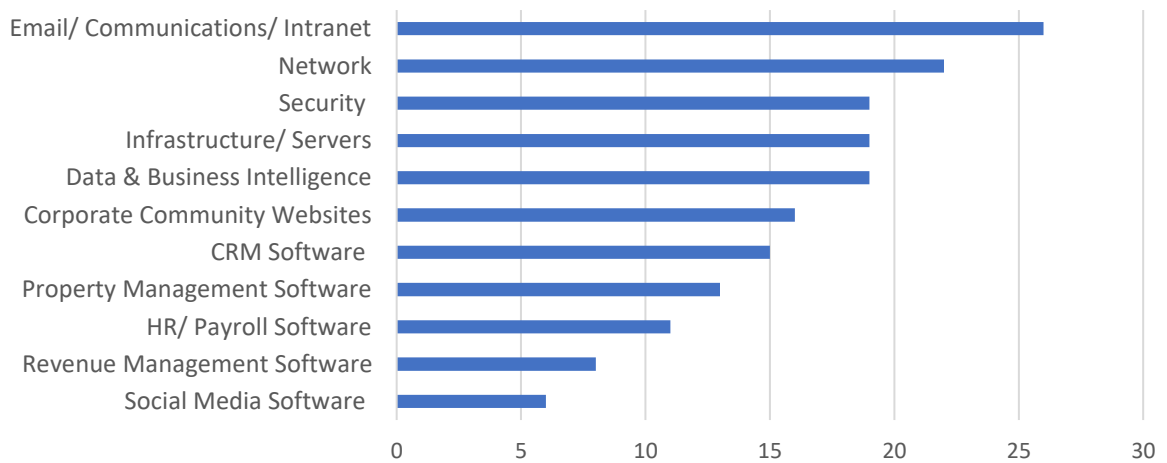


What is the Main Barrier to Innovation at Your Company?

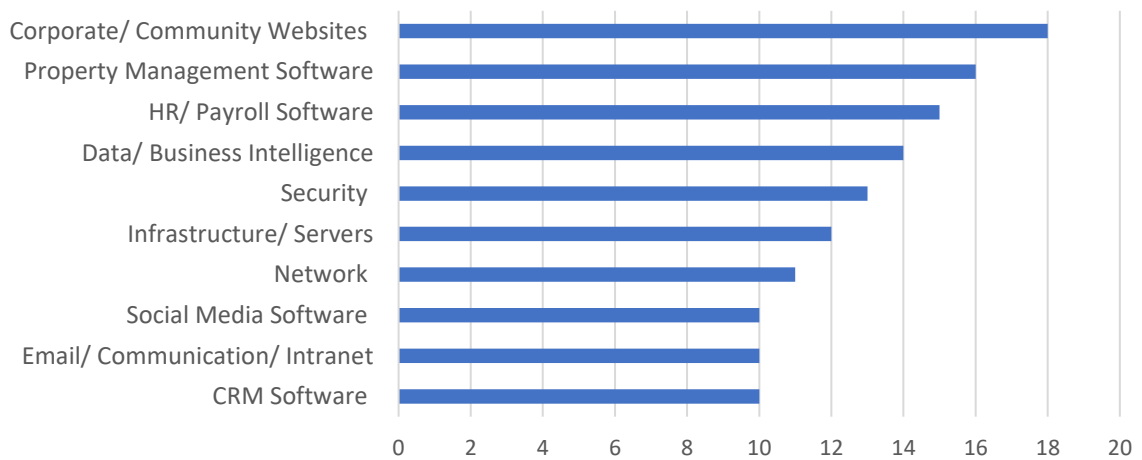
Acquiring cost approval from Asset Management. Demonstrating the tangible and intangible benefits and advancing projects as a result
Capacity while keeping up with job responsibilities since we don't carve out any roles to focus directly on innovation and rather is a shared responsibility
Change Management
Change management and maturity of solutions matching the firm's requirements
Change management aspects
Change management is difficult where the risks are so great when it comes to changing processes at a property or development process
Cost
Cost, reluctance
Cost-benefit analysis
Decision making (Systems Selection) is done by consensus rather than by technology experts. This leads to silos where departments feel free to push their favorite technology, rather than adopting a company-wide approach
End user and IT time and dollars to fully review and vet all the possible innovative solutions and improvements
Finding the monetary value of innovation and convincing decision makers/users that a particular innovation is worth implementation
Human Capital (Skills). Time and funding for research. Executives have a limited understanding of what technology can do to improve process automation and improvements
Investors unwilling to fund new technologies
Lack of in-house IT Onsite buy in
Lack of open architecture from PMS companies
Lack of perceived need for innovation in IT
Legacy process mired by technical debt
Limited Resources
Post COVID - Cost in uncertain times, Pre COVID - Number of systems for our onsite team members
Resources
Small economies of scale
Staffing
Time and Resources

In-House/Outsourced/ Co-Managed Applications

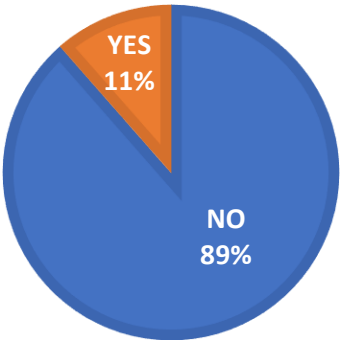
WHICH APPLICATIONS ARE SUPPORTED SOLELY IN-HOUSE? (ALL)



WHICH APPLICATIONS ARE OUTSOURCED OR CO-MANAGED WITH A MANAGED SERVICE SUPPLIER? (ALL)



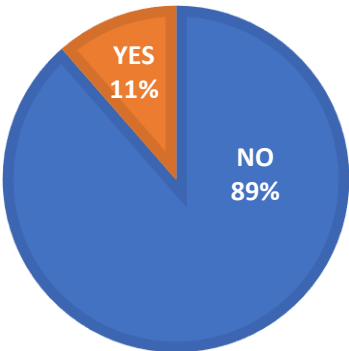
ARE THERE CAPABILITIES CURRENTLY MANAGED INTERNALLY
THAT YOU WOULD PREFER BE OUTSOURCED? (ALL)



Capabilities Preferred to be Outsourced

Construction Workflows
Support
Incident Response

ARE THERE I.T.-CENTRIC AREAS YOU WOULD LIKE TO MANAGE
INTERNALLY, BUT LACK THE TRAINING OR EXPERTISE?(ALL)

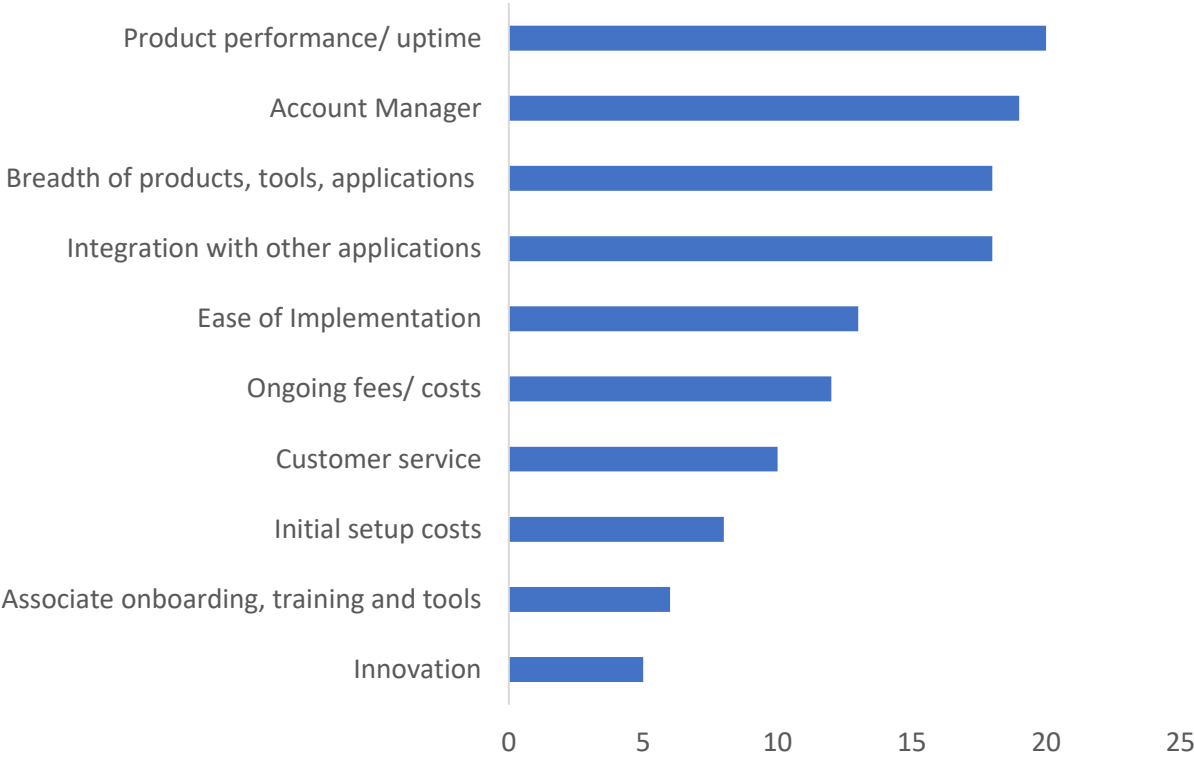


Property Management Systems

Which Best Describes Your PMS Structure?

Single stack with all communities on the same PMS platform.	64%
Hybrid/ Multiple stack- individual communities or portfolios, both company-owned and/or third-party managed, are on their own PMS platform.	29%
Hybrid/ Multiple stack- company-owned communities are single stack and any third-party managed communities are on their own or multiple PMS platforms.	7%

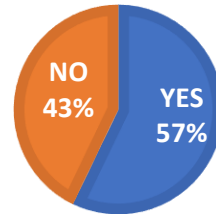
TOP AREAS OF SATISFACTION WITH FOUR LARGEST PROPERTY MANAGEMENT SYSTEMS (ALL BY NUMBER OF RESPONSES)



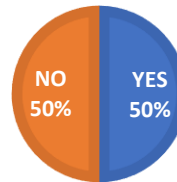


Cybersecurity

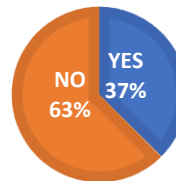
DO YOU HAVE INTERNAL STAFF DESIGNATED TO MANAGE CYBERSECURITY? (ALL)



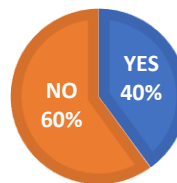
SMALLER COMPANIES



MEDIUM-SIZED COMPANIES



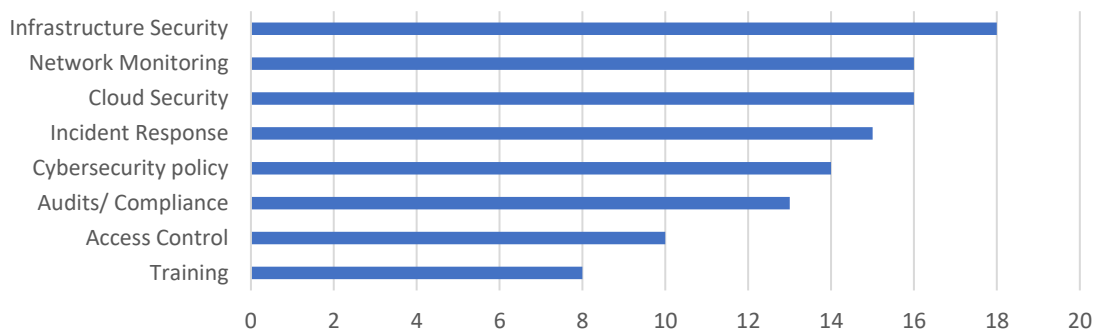
LARGE COMPANIES



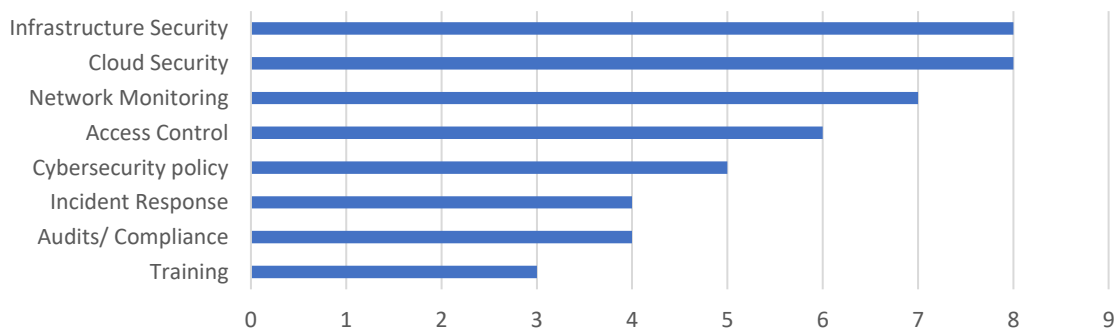
LARGEST COMPANIES



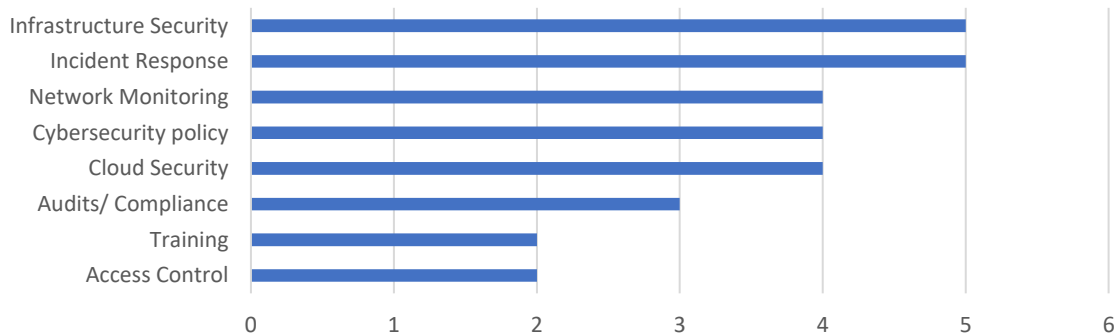
WHAT AREA OF CYBERSECURITY IS YOUR CYBERSECURITY CONSULTANT RESPONSIBLE FOR? (ALL)



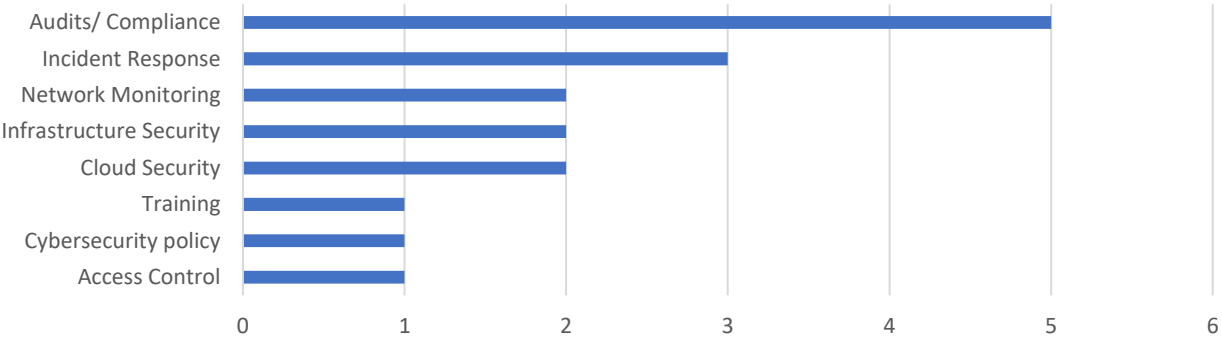
WHAT AREA OF CYBERSECURITY IS YOUR CYBERSECURITY CONSULTANT RESPONSIBLE FOR? (SMALLER COMPANIES)



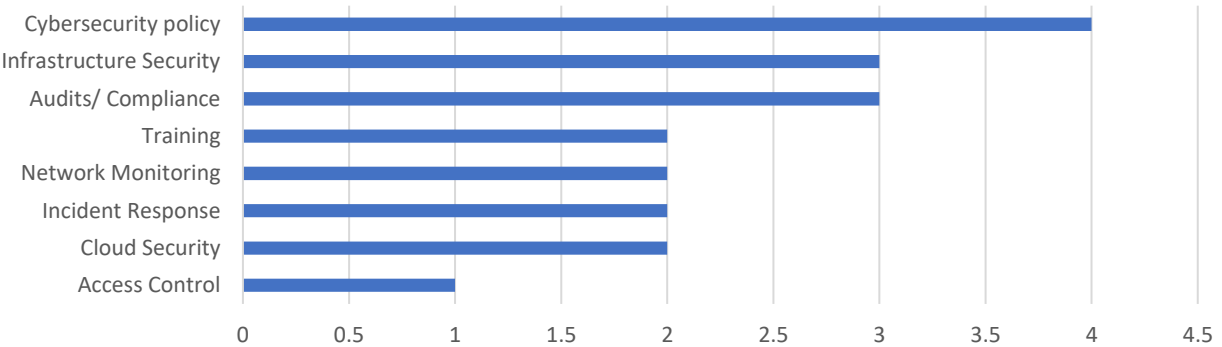
WHAT AREA OF CYBERSECURITY IS YOUR CYBERSECURITY CONSULTANT RESPONSIBLE FOR? (MEDIUM-SIZED COMPANIES)



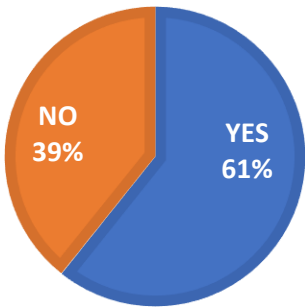
WHAT AREA OF CYBERSECURITY IS YOUR CYBERSECURITY CONSULTANT RESPONSIBLE FOR (LARGE COMPANIES)



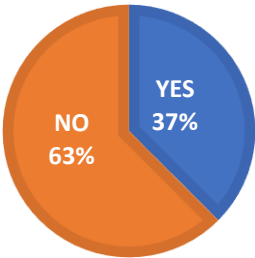
WHAT AREA OF CYBERSECURITY IS YOUR CYBERSECURITY CONSULTANT RESPONSIBLE FOR? (LARGEST COMPANIES)



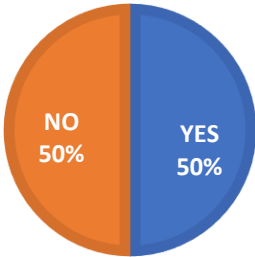
HAVE YOU CONDUCTED PENETRATION TESTING ON YOUR SYSTEMS? (ALL)



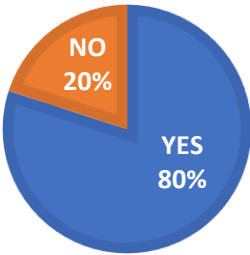
HAVE YOU CONDUCTED PENETRATION TESTING ON
YOUR SYSTEMS?
SMALLER COMPANIES



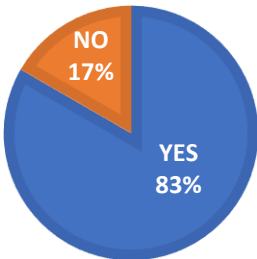
MEDIUM-SIZED COMPANIES



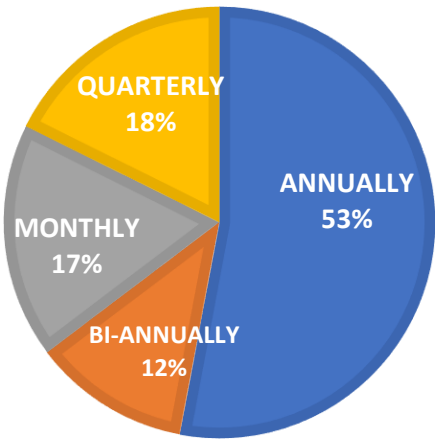
LARGE COMPANIES



LARGEST COMPANIES

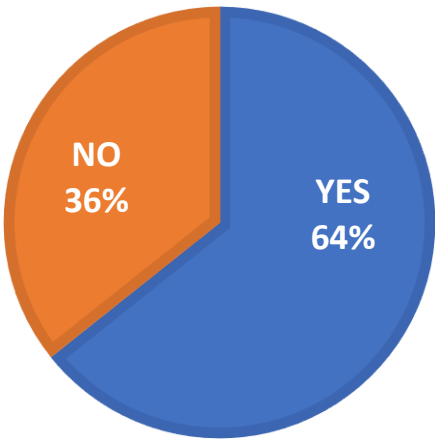


HOW OFTEN DO YOU CONDUCT PENETRATION TESTS? (ALL)

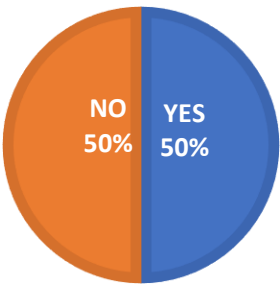


DO YOU CONDUCT REGULAR SOCIAL ENGINEERING TESTING? (ALL)

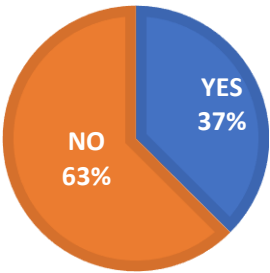
■ Yes ■ No



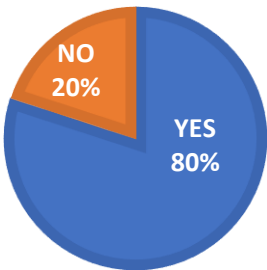
**DO YOU CONDUCT REGULAR SOCIAL ENGINEERING TESTING?
SMALLER COMPANIES**



MEDIUM-SIZED COMPANIES



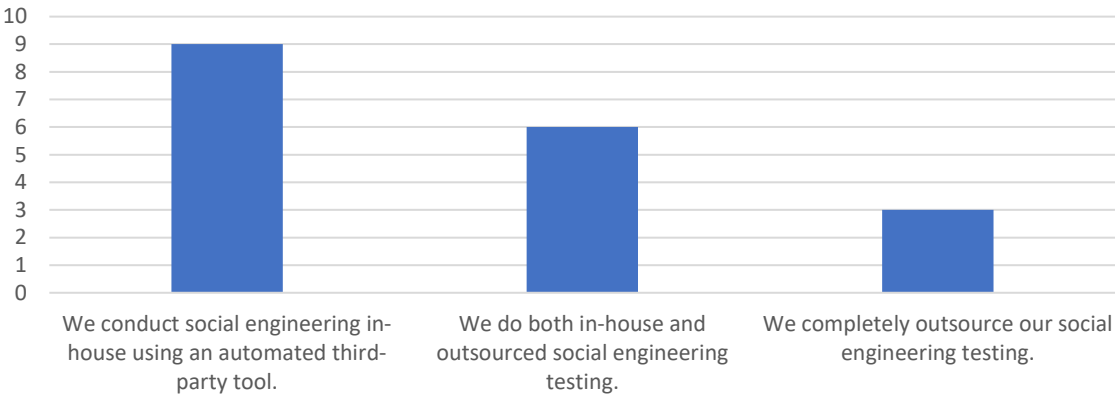
LARGE COMPANIES



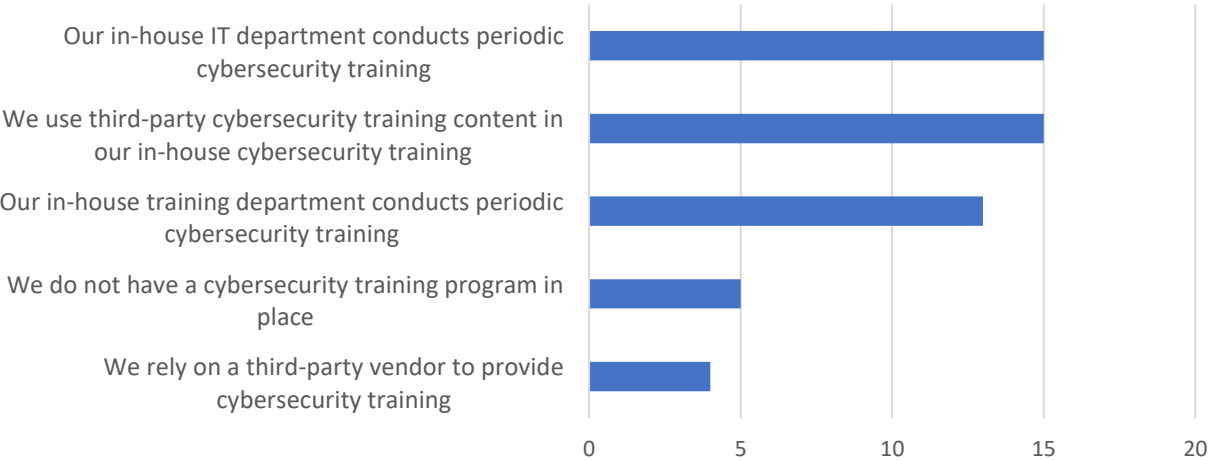
LARGEST COMPANIES



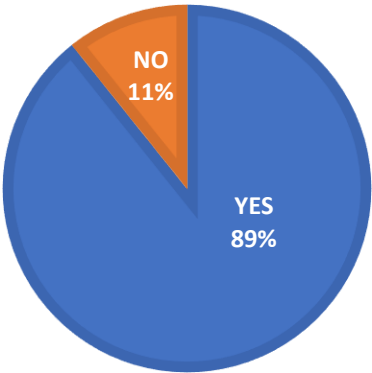
HOW DO YOU CONDUCT SOCIAL ENGINEERING TESTING? (ALL)



WHICH OF THE FOLLOWING APPLY TO YOUR CYBERSECURITY TRAINING? (ALL)

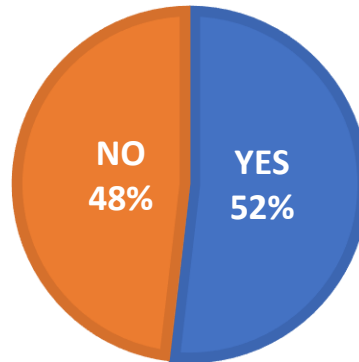


HAVE YOU PURCHASED CYBERSECURITY INSURANCE? (ALL)



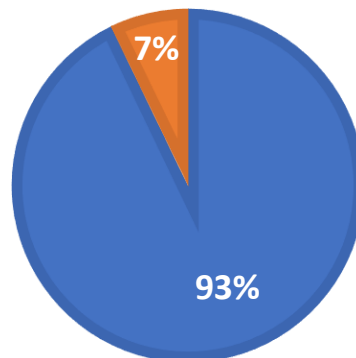
Connectivity

DO YOU HAVE INTERNAL STAFF DEDICTED TO MANAGE
TELECOMMUNICATIONS AND BUILDING TECHNOLOGY? (ALL)

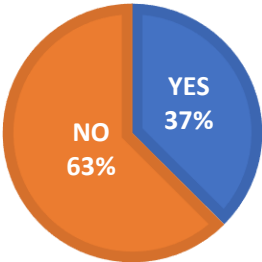


TO WHOM DOES YOUR TELECOM AND
BUILDING TECHNOLOGY STAFF REPORT? (ALL)

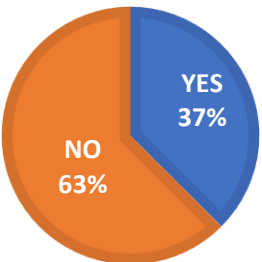
■ IT ■ ANCILLARY SERVICES



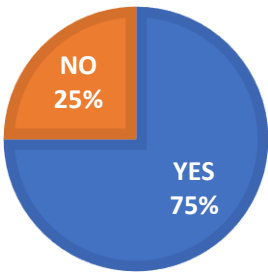
DO YOU HAVE INTERNAL STAFF DEDICATED TO MANAGING
COMMUNITY TELECOM AND BUILDING TECHNOLOGY?
SMALLER COMPANIES



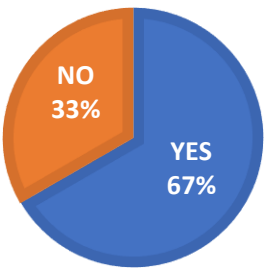
MEDIUM-SIZED COMPANIES



LARGE COMPANIES

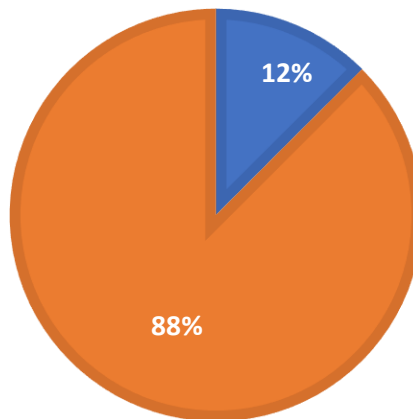


LARGEST COMPANIES

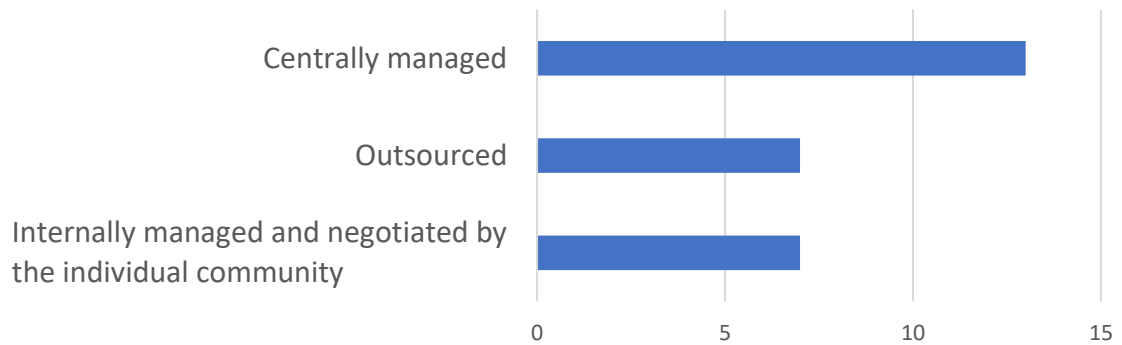


HOW DO YOU DESIGN TELECOM, BUILDING TECH, IOT INFRASTRUCTURE? (ALL)

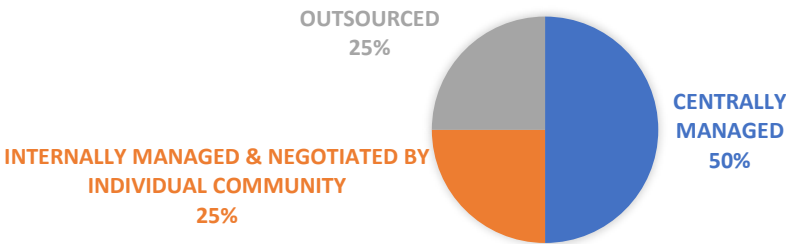
■ We design the infrastructure in-house ■ We use a third party consulting/ design firm



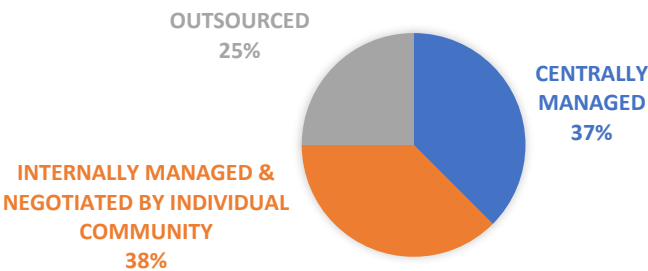
HOW DO YOU MANAGE TELECOM CONTRACTS AT YOUR PROPERTIES? (ALL)



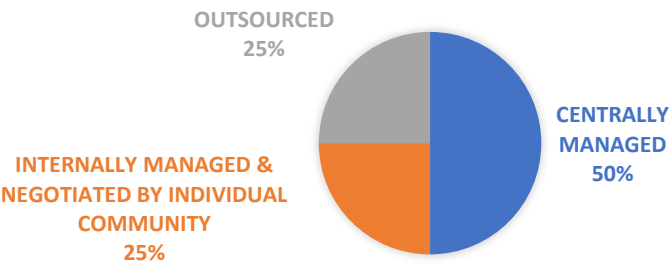
HOW DO YOU MANAGE TELECOM CONTRACTS AT YOUR PROPERTIES?
SMALLER COMPANIES



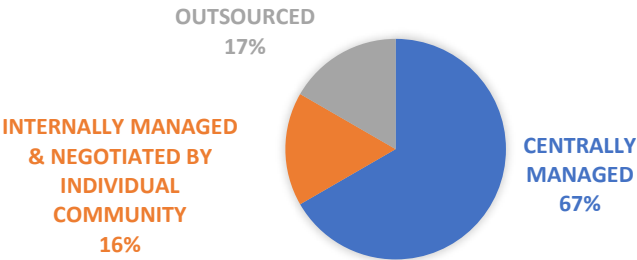
MEDIUM-SIZED COMPANIES



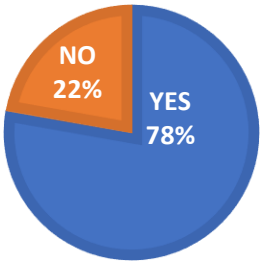
LARGE COMPANIES



LARGEST COMPANIES



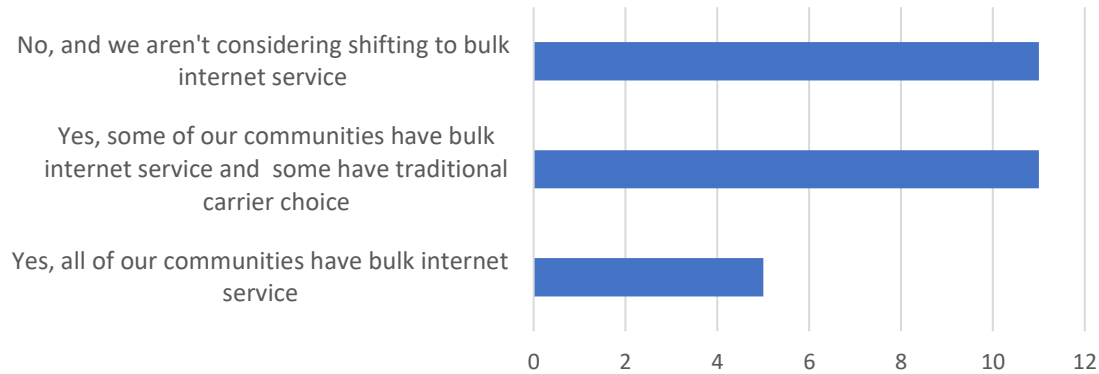
ARE YOU SATISFIED WITH THE SERVICES TELECOM COMPANIES PROVIDE TO YOUR RESIDENTS? (ALL)



Reasons for Dissatisfaction

Changing pricing structures, poor service, outages and billing issues.
Lack of training technicians and very slow response time for installation and trouble shooting.
Poorly structured deals with cable companies.
Too many diverse configurations and options. There is no standard offering.

DO YOU HAVE COMMUNITIES WITH BULK INTERNET SERVICE? (ALL)

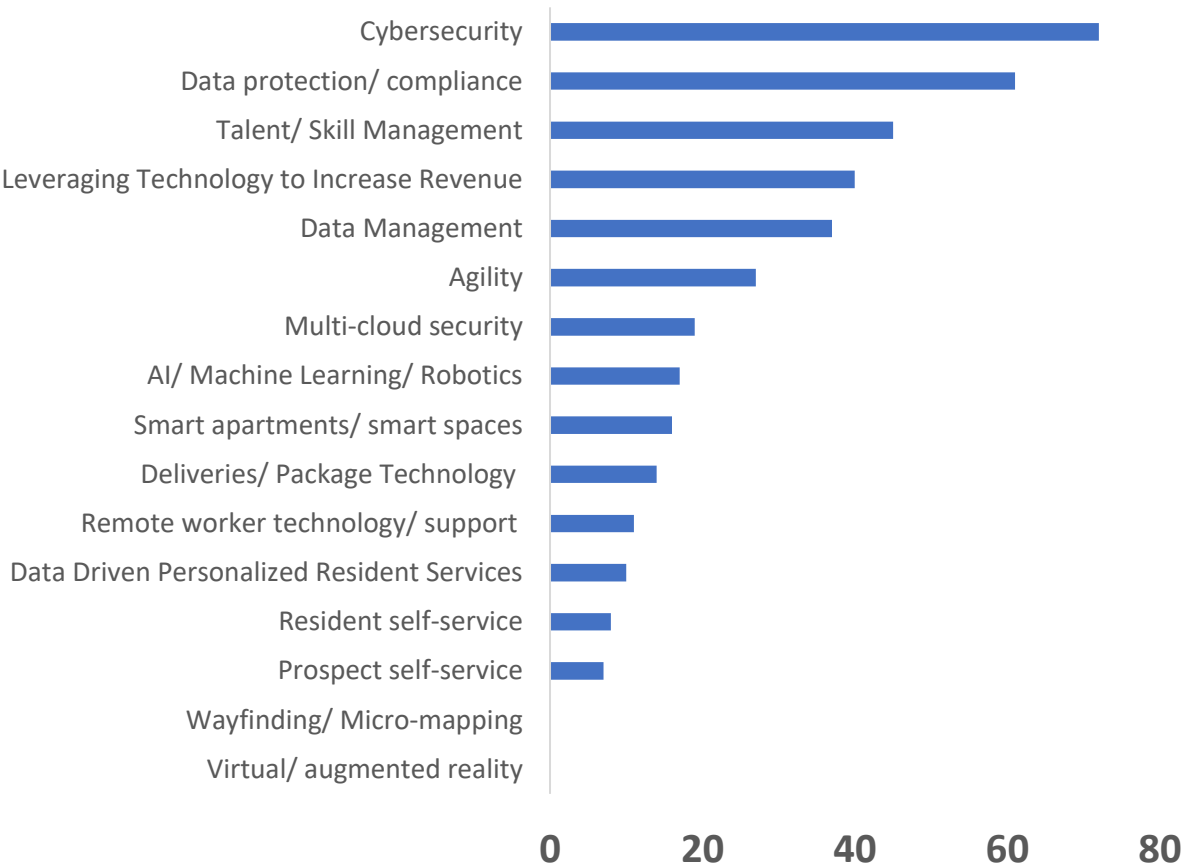


PERCENTAGES FOR THOSE WHO RESPONDED THEY HAVE BOTH BULK AND CHOICE

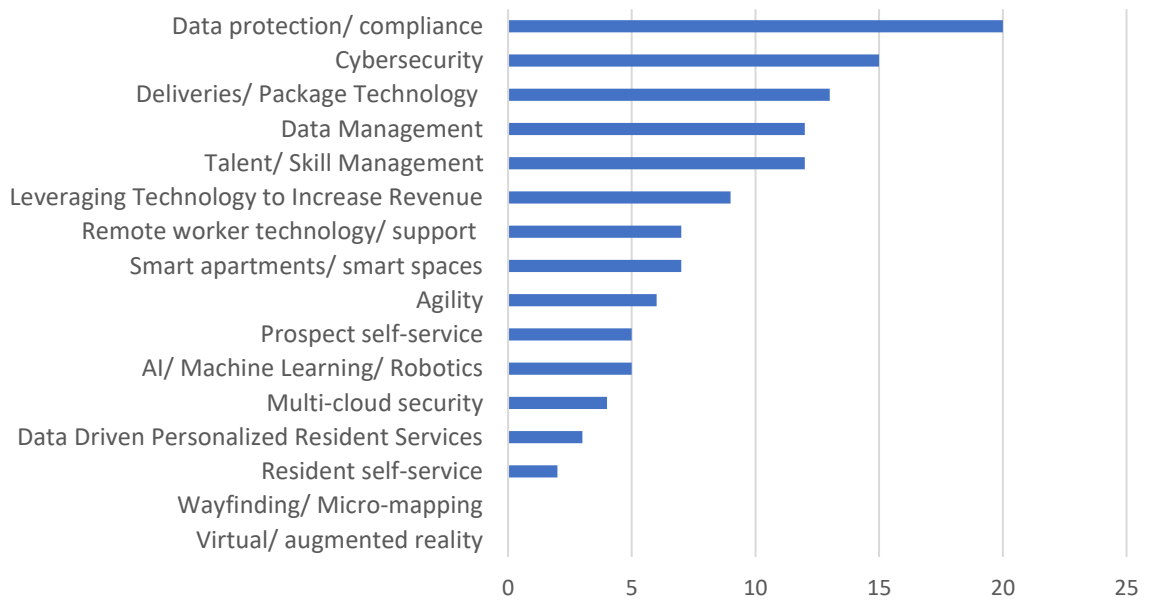
BULK	CHOICE
25%	75%
15%	85%
15%	85%
5%	95%
5%	95%
5%	95%
5%	95%
5%	95%
1%	99%

I.T. Challenges and Opportunities

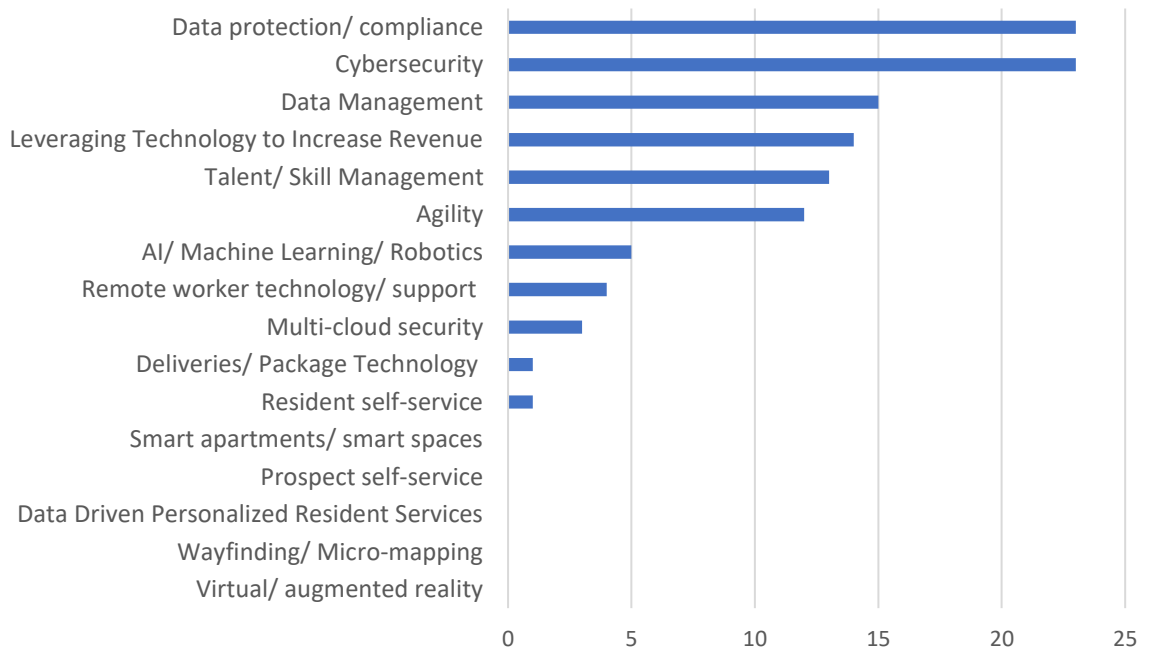
WHAT DO YOU SEE AS THE BIGGEST I.T. CENTRIC CHALLENGES YOU ARE FACING TODAY? (ALL)



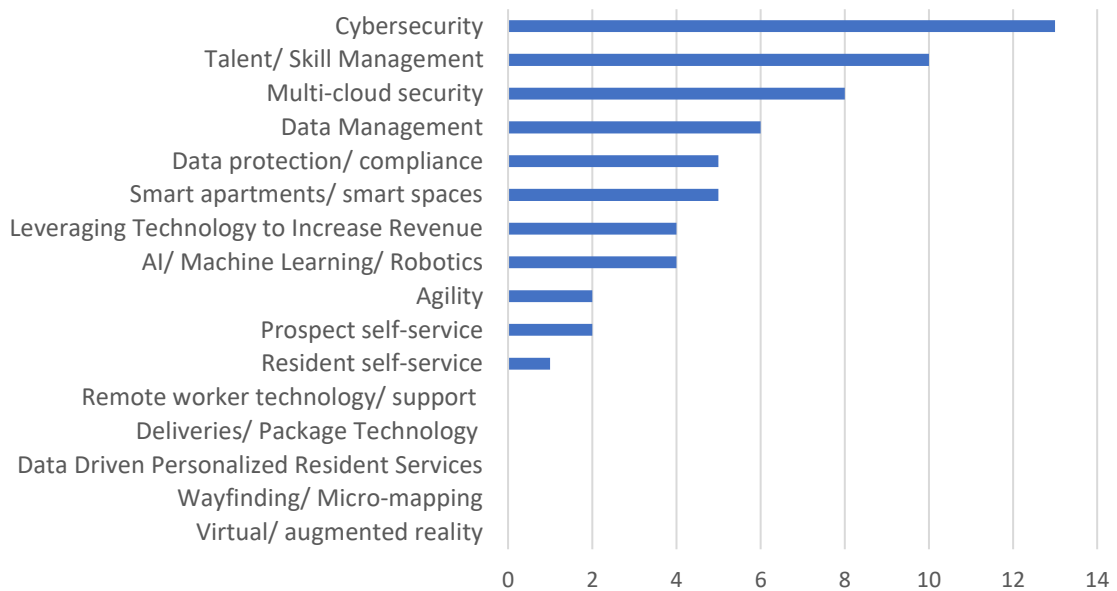
WHAT DO YOU SEE AS THE BIGGEST I.T. CENTRIC CHALLENGES YOU ARE FACING TODAY? (SMALLER COMPANIES)



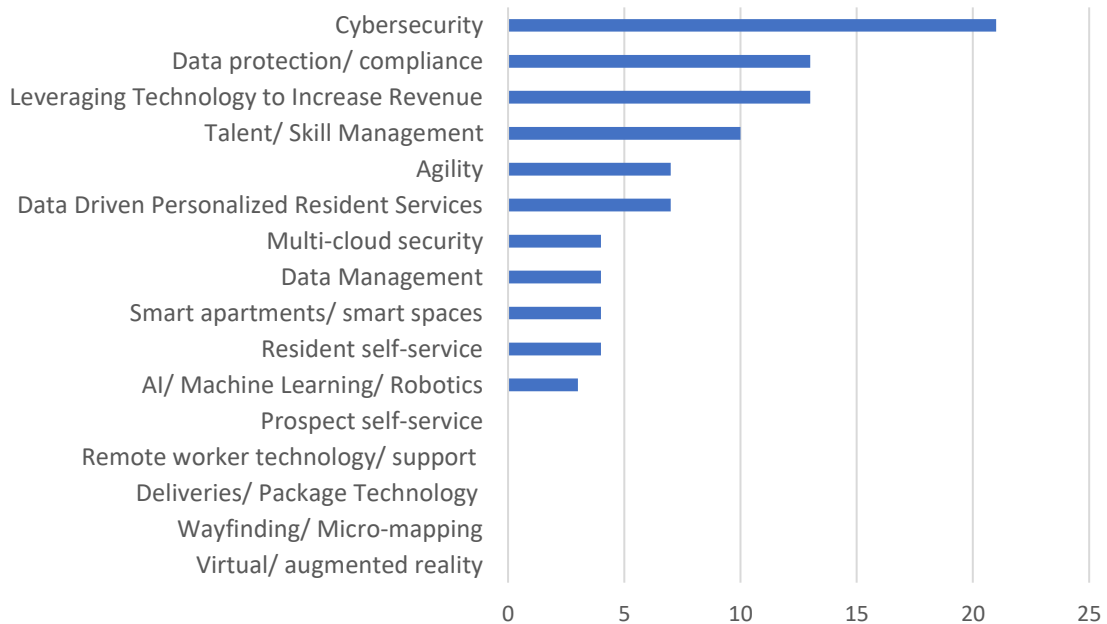
WHAT DO YOU SEE AS THE BIGGEST I.T. CENTRIC CHALLENGES YOUR ARE FACING TODAY? (MEDIUM-SIZED COMPANIES)



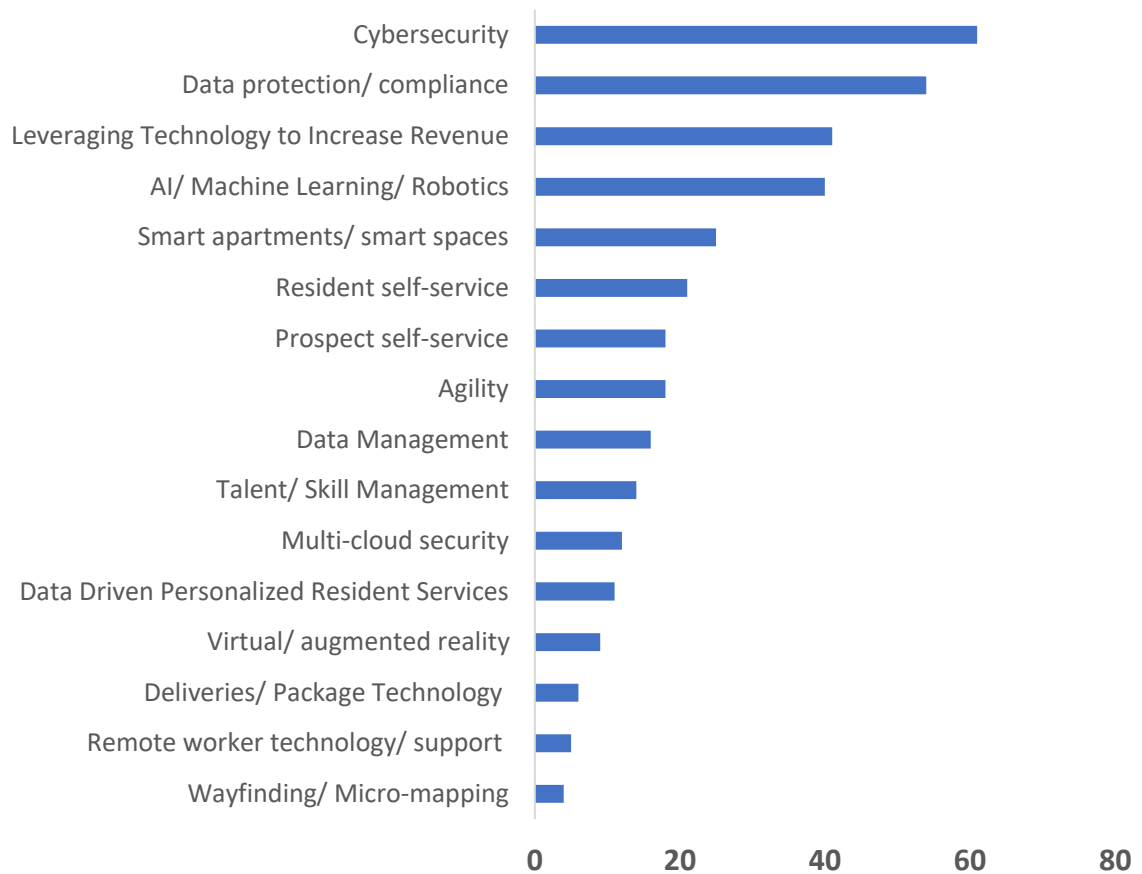
WHAT DO YOU SEE AS THE BIGGEST I.T. CENTRIC CHALLENGES YOU ARE FACING TODAY? (LARGE COMPANIES)



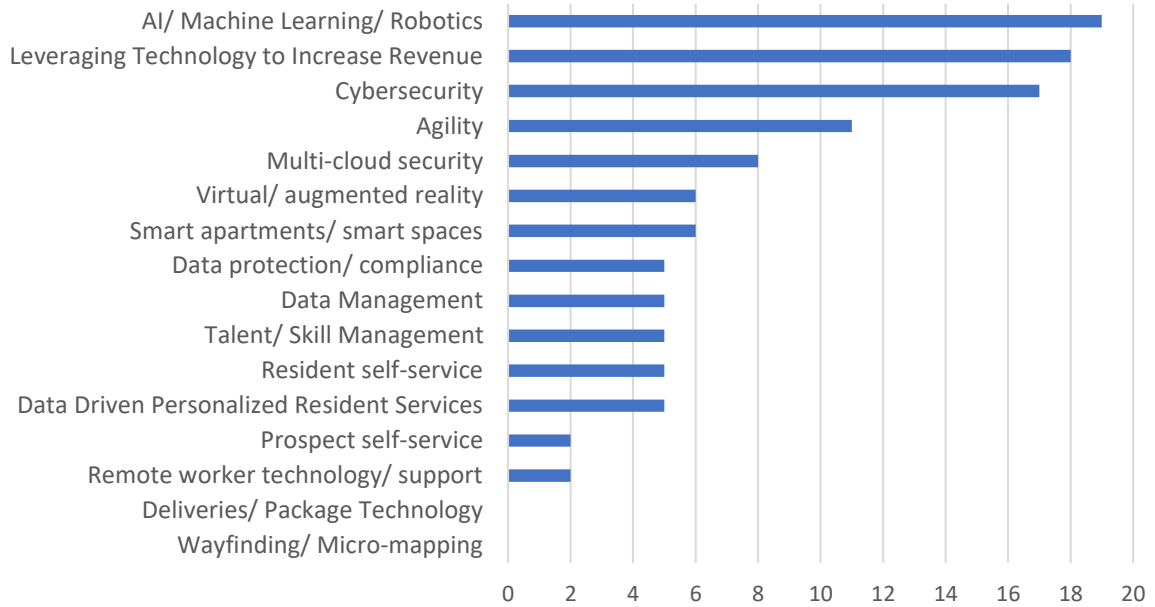
WHAT DO YOU SEE AS THE BIGGEST I.T. CENTRIC CHALLENGES YOU ARE FACING TODAY? (LARGEST COMPANIES)



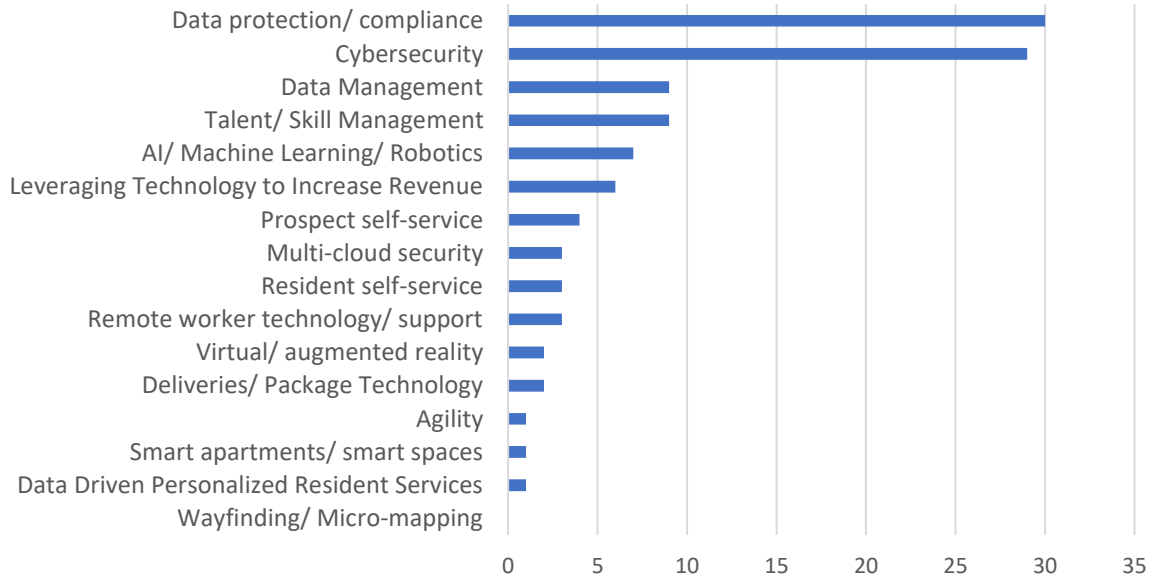
LOOKING AT THE NEXT 3-5 YEARS, WHAT I.T.-CENTRIC TOPICS DO YOU THINK WILL BE MOST IMPORTANT FOR OUR INDUSTRY TO EXPLORE AND/OR EMBRACE? (ALL)



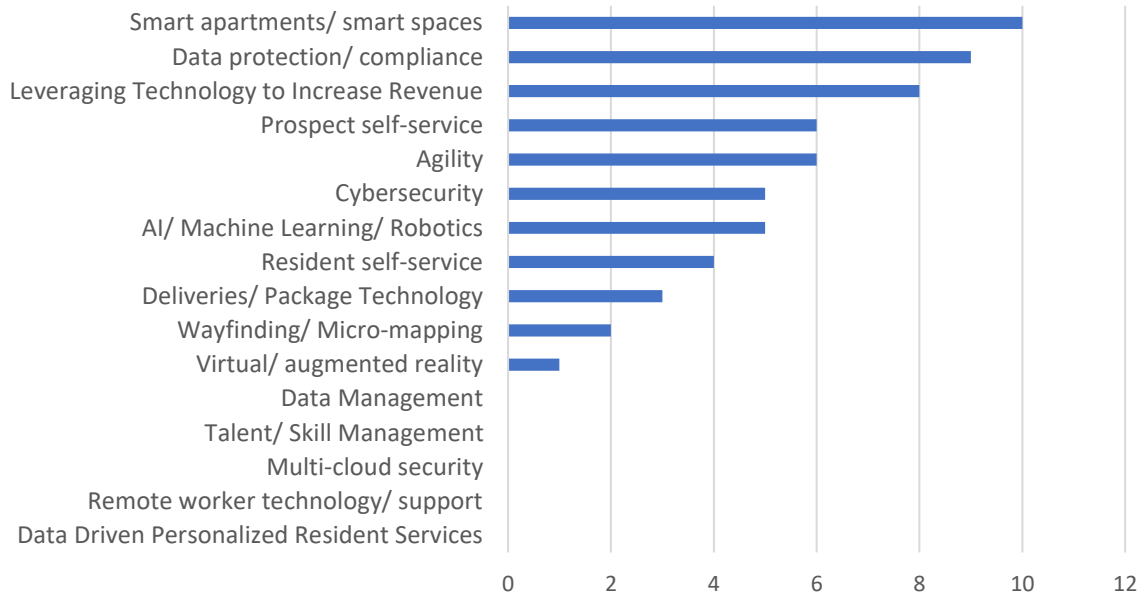
LOOKING AT THE NEXT 3-5 YEARS, WHAT I.T. CENTRIC TOPICS DO YOU THINK WILL BE MOST IMPORTANT FOR OUR INDUSTRY TO EXPLORE AND/ OR EMBRACE? (SMALLER COMPANIES)



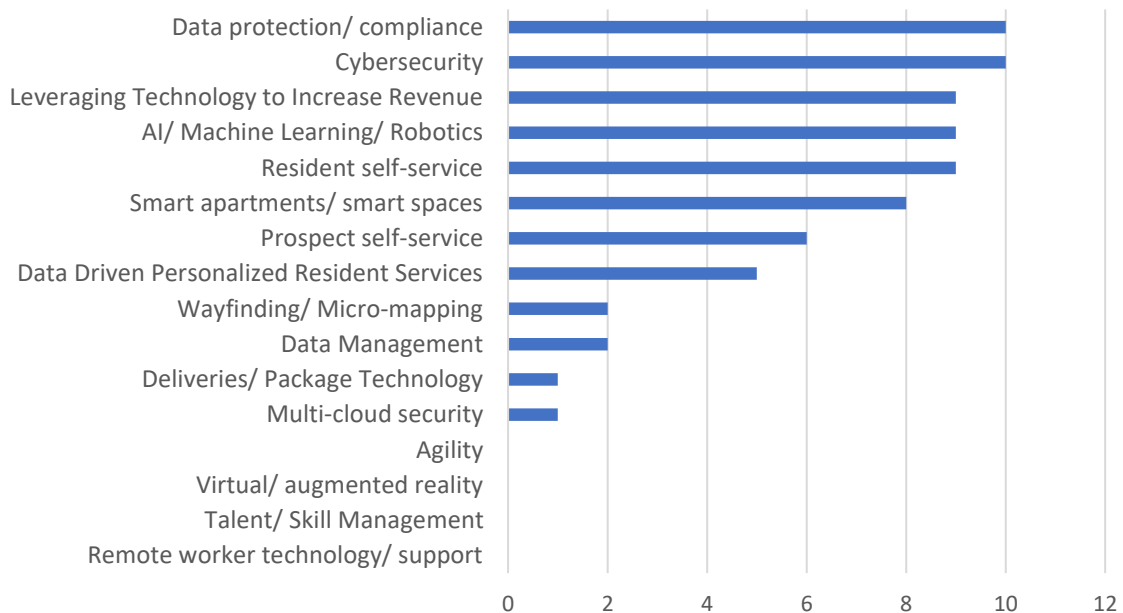
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LOOKING AT THE NEXT 3-5 YEARS, WHAT I.T. CENTRIC TOPICS DO YOU THINK WILL BE MOST IMPORTANT FOR OUR INDUSTRY TO EXPLORE AND/OR EMBRACE? (LARGEST COMPANIES)



IS THERE ANYTHING YOU WOULD LIKE TO ADD ABOUT TECHNOLOGY IN OUR INDUSTRY?

<i>"Companies are investing in internal BI tools and it is becoming increasingly important to be able to transfer PMS data into internal digital warehouses. This data can then be used to model and predict."</i>
<i>"Data privacy is becoming very complex as more states pass different laws - given the amount of data we have as an industry we need a US standard. Rent control is showing up more often and PMS vendors do not have effective management tools."</i>
<i>"It can be challenging to identify truly integrated solutions that work well together."</i>
<i>"We are still far behind as an industry in how we manage and source technology. Too many companies still act within multiple silos to determine technology needs instead of prioritizing common data structures and definitions."</i>