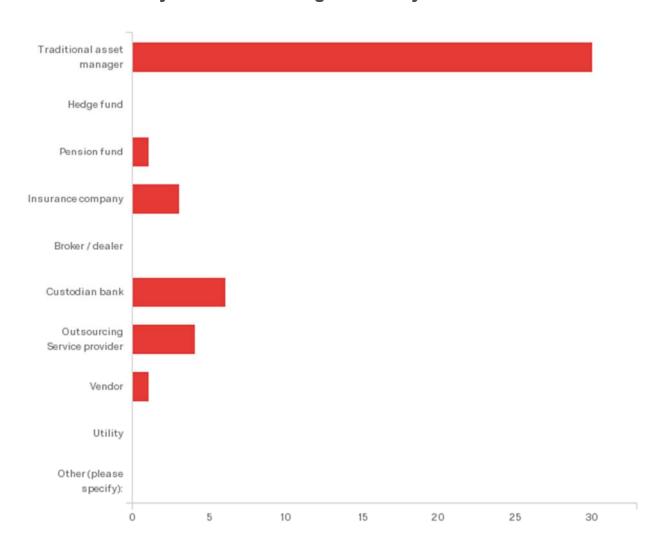
Future of Operations Survey Results

April 2016

A working group of the SIFMA AMG Operations Executive Committee has been discussing future of operations and the forces that are pressuring operational change, including trends in the investment management world, internal and external cost pressures, technology, regulatory demands, client demands, and potential game changes in financial technology. This survey was developed to poll AMG members' thoughts and opinions regarding the future or operations, and to contribute to the ongoing discussion.

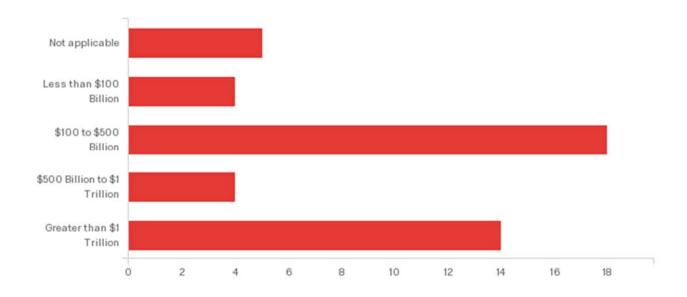
What most closely identifies the organization you work for?



Answer	%	Count
Traditional asset manager	67%	30
Hedge fund	0%	

Pension fund	2%	1
Insurance company	7%	3
Broker / dealer	0%	
Custodian bank	13%	6
Outsourcing Service provider	9%	4
Vendor	2%	1
Utility	0%	
Other (please specify):	0%	
Total	100%	45

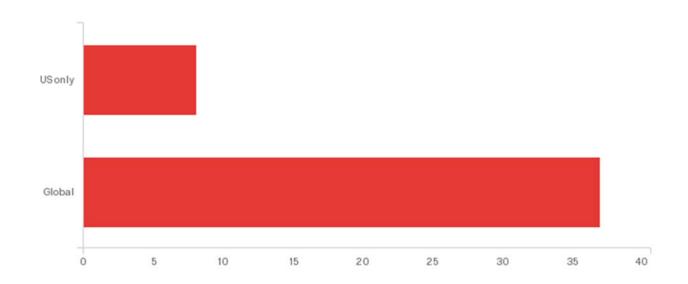
2. What is the size of your firm (in AUM, \$U.S.):



Answer	%	Count
Not applicable	11%	5
Less than \$100 Billion	9%	4

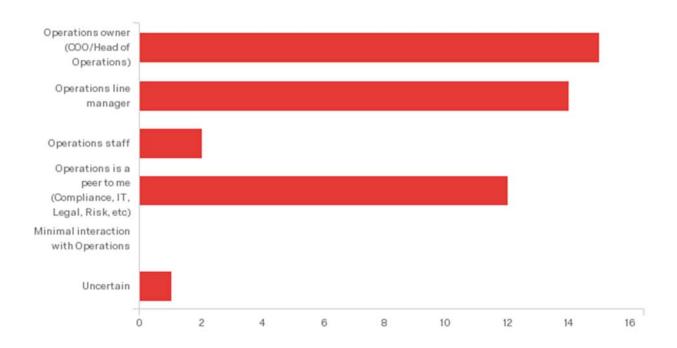
\$100 to \$500 Billion	40%	18
\$500 Billion to \$1 Trillion	9%	4
Greater than \$1 Trillion	31%	14
Total	100%	45

3. Is your firm's operating model:



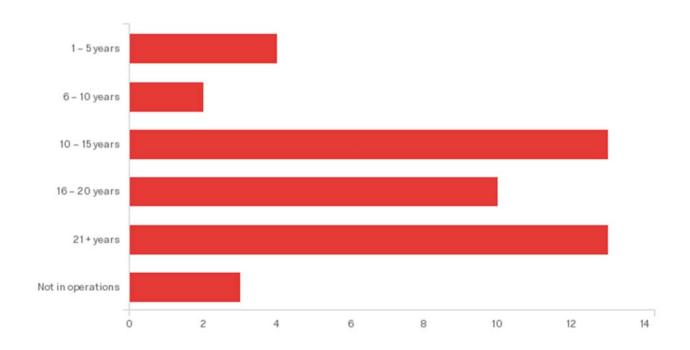
Answer	%	Count
US only	18%	8
Global	82%	37
Total	100%	45

4. What is your role and engagement within Operations at your firm?



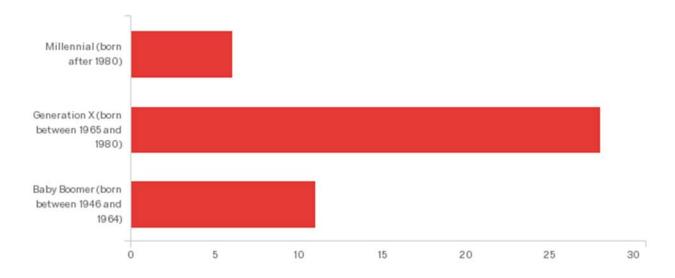
Answer	%	Count
Operations owner (COO/Head of Operations)	34%	15
Operations line manager	32%	14
Operations staff	5%	2
Operations is a peer to me (Compliance, IT, Legal, Risk, etc)	27%	12
Minimal interaction with Operations	0%	
Uncertain	2%	1
Total	100%	44

5. What is your tenure within Operations?



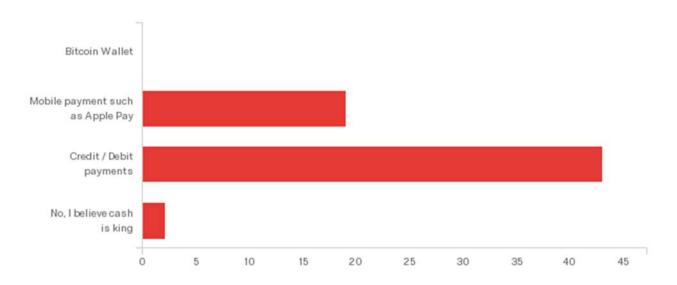
Answer	%	Count
1 – 5 years	9%	4
6 – 10 years	4%	2
10 – 15 years	29%	13
16 – 20 years	22%	10
21 + years	29%	13
Not in operations	7%	3
Total	100%	45

6. What generation do you belong to?



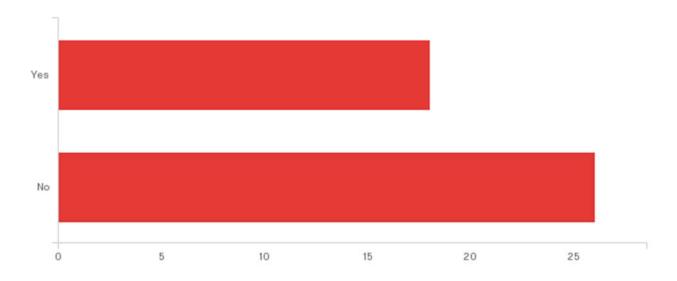
Answer	%	Count
Millennial (born after 1980)	13%	6
Generation X (born between 1965 and 1980)	62%	28
Baby Boomer (born between 1946 and 1964)	24%	11
Total	100%	45

7. Do you use digital currency for your personal transactions? (Select all that apply)



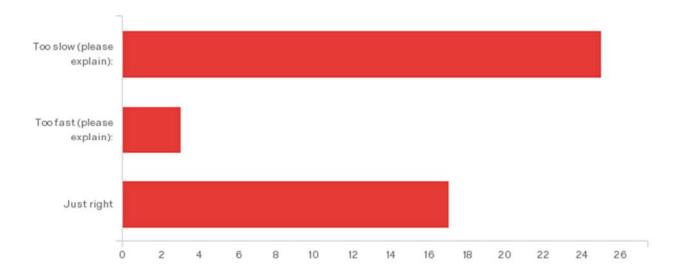
Answer	%	Count
Bitcoin Wallet	0%	
Mobile payment such as Apple Pay	43%	19
Credit / Debit payments	98%	43
No, I believe cash is king	5%	2

8. Do you think that physical cash is going away?



Answer	%	Count
Yes	41%	18
No	59%	26
Total	100%	44

9. Do you feel the pace of change within Operations has been?



Answer	%	Count
Too slow (please explain):	56%	25
Too fast (please explain):	7%	3
Just right	38%	17
Total	100%	45

Too slow (please explain):

Change is required at a faster pace than the industry is able to mobilize

Difficult to stay ahead of changes (pull effect).

Not enough infrastructure, people still using faxes

Limited technology being utilize and need a global consortium to detail the protocol to use in the future (it cannot be disjointed).

Costs are impairing the growth of operations

There are always many ideas for change, but the implementation of those ideas is slow. This is because you must always consider the existing business model and obligations. You cant just through out the old for the new. It has to evolve. Also the lack of standardization at the industry level makes change unattainable. Custodians need to

work together. Our difficulty lies with the fact that every custodian and broker we deal with does things differently.

Technology resources seem to be allocated more to front offices leaving the Operational flows causing it difficult to catch up with change

It's been reactionary and not innovative enough

Standardization of information would lead to less breaks and faster confirmations (Settlements) and elections (Corporate actions)

Operations & technology within asset management firms & banks needs to keep up with the technology the rest of the world sees.

Retirement of redundant processes across the industry has been too slow.

Challenge in unwinding the component architecture that has been built on over the years.

Change from the front office (new products, higher volumes) and regulators (new forms, filings and rules) have outpaced investment in back office systems.

technology initiatives and enhancement is lagging the industry needs

The spagnetti of legacy technology that has been integrated to create today's infrastructure is hindering the ability to adopt new technology in a more strategic fashion at a good pace.

Smaller entities are blocking effective change

I have the perception that sometimes Operations teams are last on the totem pole for investment from firms. As a result, change is sometimes slower than in other areas of firms.

hard to keep up with technology changes and the expense that goes with it

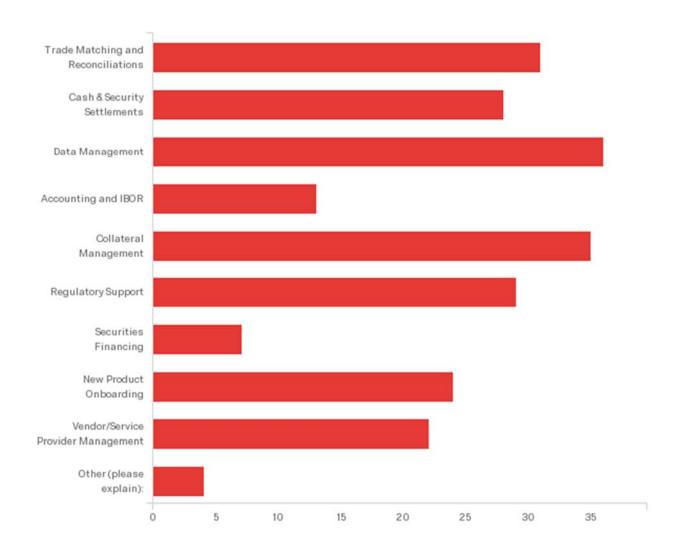
Too fast (please explain):

Risk, regulation and increased client demand is speeding up the pace of change

Technology can't keep up with the industry changes and the new products. As a result, manual spreadsheets and macros become our tool set.

It has been difficult to effectively control the environment given the pace of technological change, particularly when coupled with the regulatory changes that are being experienced. We could handle one or the other. But, both together are taxing the organization and put controls at risk.

10. What area of Operations presents significant opportunity for change and innovation? (Select all that apply)



Answer	%	Count
Trade Matching and Reconciliations	69%	31
Cash & Security Settlements	62%	28
Data Management	80%	36
Accounting and IBOR	29%	13
Collateral Management	78%	35
Regulatory Support	64%	29

Securities Financing	16%	7
New Product Onboarding	53%	24
Vendor/Service Provider Management	49%	22
Other (please explain):	9%	4

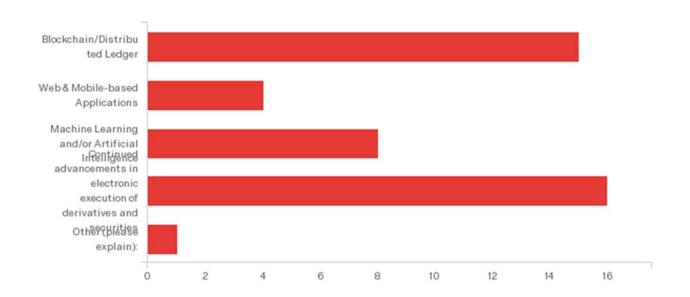
Other (please explain)

Creation of robotic processes

expense management / oversight

corporate action processing, derivative messaging

11. What technology do you believe presents the greatest promise for operational innovation?

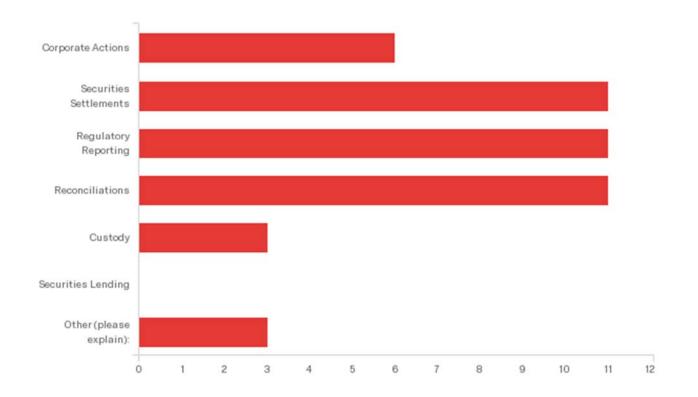


Answer	%	Count
Blockchain/Distributed Ledger	34%	15
Web & Mobile-based Applications	9%	4
Machine Learning and/or Artificial Intelligence	18%	8
Continued advancements in electronic execution of derivatives and securities	36%	16
Other (please explain):	2%	1
Total	100%	44

Other (please explain):

Improvements in agreements to standards, reduced licensing fees for commodity data. An actual technology: Robotic processing

12. Which area of operational trade support needs to be "futurized" first?



Answer	%	Count
Corporate Actions	13%	6
Securities Settlements	24%	11
Regulatory Reporting	24%	11
Reconciliations	24%	11
Custody	7%	3
Securities Lending	0%	
Other (please explain):	7%	3
Total	100%	45

Other (please explain):

Derivatives

OTC Derivatives

bank Loans. it is completely manual and therefore easier to change

13. What new or expanded opportunities do you see emerging within Operations?

Blockchain will completely change the game from many perspectives, looking forward to implementing processes and testing systems.

continued outsourcing and IBOR

I believe that Blockchain has the potential to improve the communication and confirmation space, but data management for individual firms is still a must do to improve the internal and external data quality that can be leveraged for clients and internal improvements.

Increased use of technology in industry core operations, making it easier for asset firms to integrate. Less translation needed to match front end.

Point to point confirmation along with PSET and instruction match. Custodian feed of Omgeo ALERT instructions.

1 - Integrated derivative documentation/collateral optimization/collateral messaging platform. 2 - Automated identification of dealer and end user counterparty entity status/regulatory governance model and automated

regulatory reporting based on same.

It is a role of increasing importance in light of new regulation. Collateral management is now graduating to a front office challenge. The more we can work cross functionally across areas and share information the more we all learn and can tackle problems quickly.

Regulatory and efficiency

More automation of tedious tasks and dashboards of status so that staff and managers can spend their time resolving issues and creating further automation and efficiency. Email management or elimination of email through the use of better workflow tools.

Eliminate the need for operational functions. Have a true gold copy that everyone who needs it is permissioned to access and get out of the business of everyone maintaining data on individual systems with all the reconcililations necessary.

Data Management will continue to rise as Compliance and Risk have.

Standardization and Automation - No Touch Confirmation and Reconciliations with rules based validations and exceptions processing.

As creativity increases with new product type offerings with regulations bringing in different types of market players, operations will continue to have to adapt and provide support accordingly.

becoming more in like with supporting trading and execution, assisting with locates and borrow rates, structuring of otc derivative products

Unknown

The demand for accurate data requires improved quality processes and automation while reducing the number of disparate sources across the industry.

Support of regulatory, enhanced risk and client reporting requirements.

Collateral processing and transformation will be big as more instruments become cleared.

More efficiency and STP between order execution and settlement. More asset class support for efficiency and STP.

"Enhanced" Custody or Reporting on non-custodial asset types

ability to more closely monitor intra day cash to manage balances, credit or debit, on an intraday basis.

The need for flexibility, customer focus and more efficient use of resources is going to require greater mobility, adaptability and collaboration.

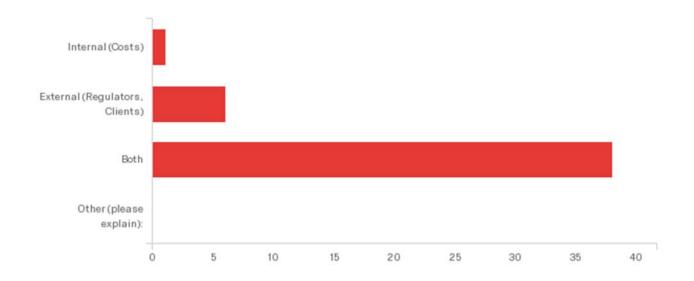
More centralized, less silos. More standardization. Fuller understanding for Sr mgmt. Decision makers [\$] need more knowledge.

Using business intelligence to electronically prioritize and clear exceptions facilitating accelerated settlements.

With new technology, many operations functions can truly achieve the next level of straight through processing. With distributed ledgers, STP can move from automated messaging across a chain of systems to a central system that handles most functions which will speed up operations and also automate more functions. This should result in operations being more aligned with data scientists and technologists that can exception solve vs. process only.

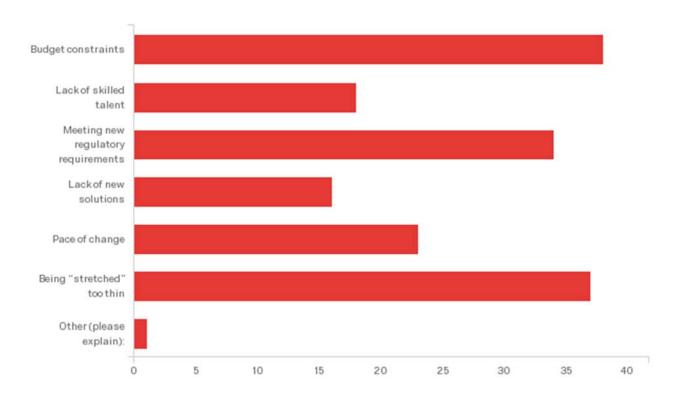
The ability to enable more straight through transactions. Faster settlements will drive the need to ensure that trades are executed in a more flawless manner.

14. Where are the pressures for changes coming from?



Answer	%	Count
Internal (Costs)	2%	1
External (Regulators, Clients)	13%	6
Both	84%	38
Other (please explain):	0%	
Total	100%	45

15. What challenges exist to meeting current demands on Operations professionals? (Select all that apply)

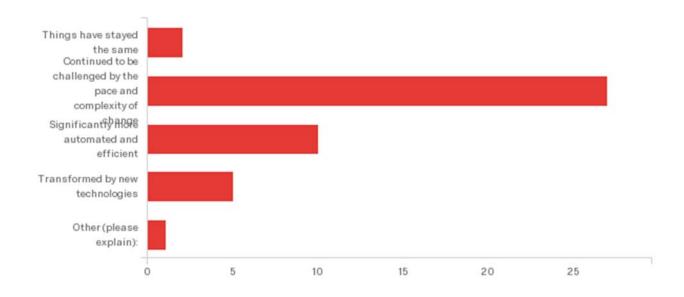


Answer	%	Count
Budget constraints	84%	38
Lack of skilled talent	40%	18
Meeting new regulatory requirements	76%	34
Lack of new solutions	36%	16
Pace of change	51%	23
Being "stretched" too thin	82%	37
Other (please explain):	2%	1

Other (please explain):

There is a lack of skilled talent because of the historical focus on functional organizations. As a result, many with less tenure have a narrowed knowledge base from which to innovate.

16. Where do you see Operations in the next 5 years?

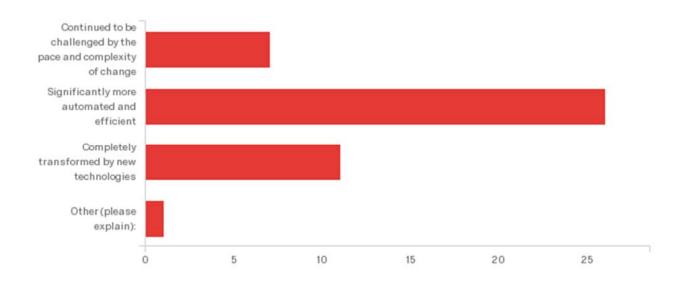


Answer	%	Count
Things have stayed the same	4%	2
Continued to be challenged by the pace and complexity of change	60%	27
Significantly more automated and efficient	22%	10
Transformed by new technologies	11%	5
Other (please explain):	2%	1
Total	100%	45

Other (please explain):

combination of more automated with technology (new) and still strapped / challenged as legacy technology for operations is too antiquated.

17. Where do you see Operations in the next 10 years?

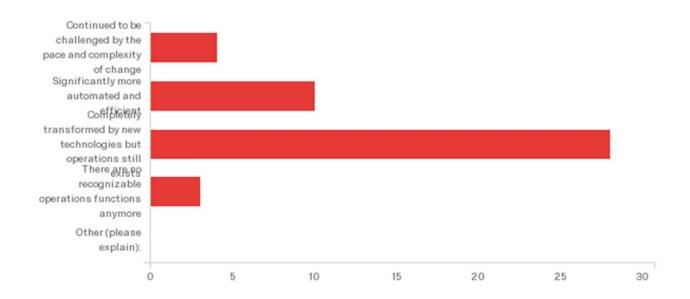


Answer	%	Count
Continued to be challenged by the pace and complexity of change	16%	7
Significantly more automated and efficient	58%	26
Completely transformed by new technologies	24%	11
Other (please explain):	2%	1
Total	100%	45

Other (please explain):

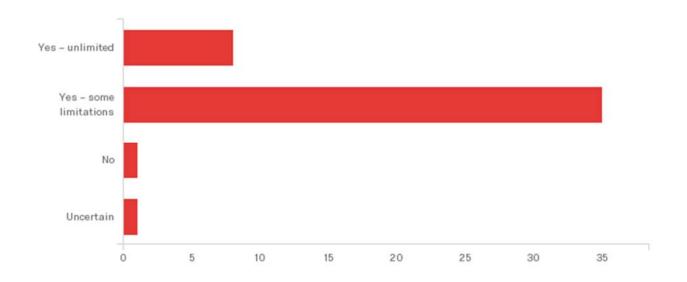
Gradually transformed by necessary change

18. Where do you see Operations Beyond 10 years from now?



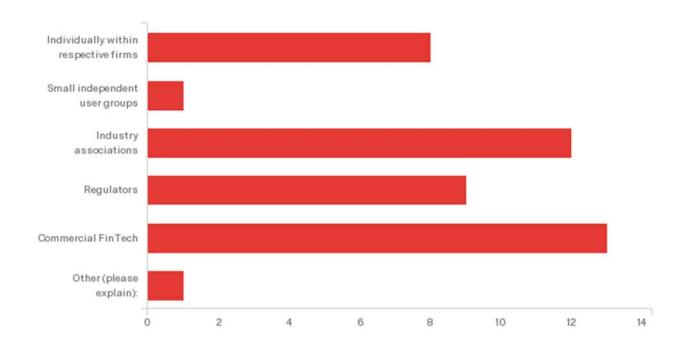
Answer	%	Count
Continued to be challenged by the pace and complexity of change	9%	4
Significantly more automated and efficient	22%	10
Completely transformed by new technologies but operations still exists	62%	28
There are no recognizable operations functions anymore	7%	3
Other (please explain):	0%	
Total	100%	45

Q20 - 19. Are you motivated and empowered within your role to make meaningful differences to Operations?



Answer	%	Count
Yes – unlimited	18%	8
Yes – some limitations	78%	35
No	2%	1
Uncertain	2%	1
Total	100%	45

20. Who do you believe will drive the most meaningful industry change for Operations?

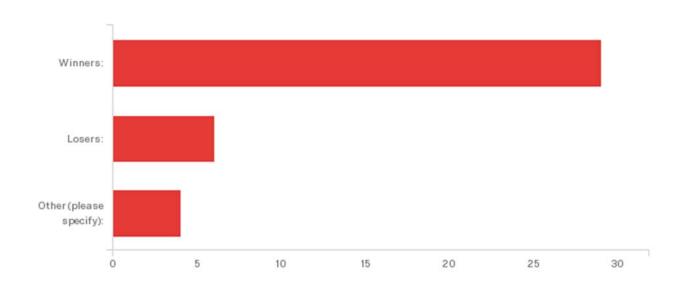


Answer	%	Count
Individually within respective firms	18%	8
Small independent user groups	2%	1
Industry associations	27%	12
Regulators	20%	9
Commercial FinTech	30%	13
Other (please explain):	2%	1
Total	100%	44

Other (please explain):

combination of regulators and government and then FinTech solutions to assist asset managers where home grown applications do not apply.

21. Who are winners and losers as Operations changes?



Answer	%	Count
Winners:	74%	29
Losers:	15%	6
Other (please specify):	10%	4
Total	100%	39

Winners:

end clients

shareholders and vendors

Firms as they are able to adapt to changes more easily.

Firms in terms of lower cos

Thought leaders
Regulators
I would consider everyone a winner. You can do more with less and have the result be accurate, despite complexity.
Clients, Asset Managers, the industry as a whole
the firms themselves due to the capacity being created and the ability to meet all changes
front office
Large Globally Diversified Firms
Large and small companies reducing cost
Our Clients
large banks and vendors
Clients
Underlying shareholders
Shared infrastructure utilities and Middle office providers
Companies that can keep pace.
FinTech
clients
Risk Managers
Investors with minimized errors, quicker time to market, and potentially reduced fees. Asset management firms with reduced costs.
Highly skilled subject matter experts that can drive business process with technologists
Brokers, Investment Firms, Custodians
Clients as operational changes can drive down costs and improve performance.
Firms, as they lower their risk exposure

Operations staff.
funds/shareholders due to cost to implement ops changes
Those who are unable to adapt at all or at a quick enough pace
people who are not or can not stay current with the industry and where it is going.
Offshore routine task employees
Employees
Other (please specify):
I wouldn't say winners/losers but roles will be replaced and changed based on new technology on the horizon. Too early to speculate what groups will be affected the most.
Large, bloated operations teams that in the past hired people, continued with manual processes and were passive

Companies and individuals will transform who they are and what they do. Change leads to opportunity.

It depends on what is a winner. I think there will be more analytical roles for operation professionals but a lot

Losers:

with regard to a changing environment.

less clerical positions.

22. If you could change one thing right now about operations, what would it be?

Settlement lag.

more STP/common messaging to and from admin/custodians/prime brokers

Adoption of change

Capital investment to revamp how systems interconnect.

Get global regulators to standardize their requirements around reporting/clearing. Get the regulators to define products explicitly (FX forward vs spot) so that rules can be implemented in compliance with regulatory requirements for global clients.

The high turnover. Make it a more established career path.

Automation or lack there of. There is still this notion of "silos" between like organization within the same industry. Like organizations need to think alike and use new technology to drive the industry forward. There is a need to get out of the silo mindset and collectively think on how to automate to remove the large operational cost banks face in the growing complex world of finance.

Vendors to enhance their technology to be in line or ahead of regulatory requirements and client control oversight needs

More streamlined

No more FAXES

The standardization of trade communication, onboarding documentation, reconciliations information, trade reporting, and data management would make the work run so much smoother.

Improved talent pool to fill operational roles. The role has changed dramatically over the past 10-15 years. An operational professional must be able to drive change, be technologically advanced, create new workflow solutions, communicate more effectively and various other skills that were not necessarily required in the past.

Have leaders across the industry stand up and support really big change.

Create more standardization from a servicing and client needs perspective.

Business process disparities across asset class, regions and functions.

Election process for corporate actions needs to be better automated as it is the riskiest of functions.

Increase compatibility amongst data flow and systems by further defining market standards (either officially via regulation or unofficially via market participants).

in our shop, i would remove all the back office operations and outsource to a bank. for our fund adminstrion part of business i would ask that these fund admins take on more work/responsibility. then, utilize a data warehouse to have oversight of all the OMS systems as well as back office information from the various banks/admins. currently, our workflow does not look this way, and because of this is causes pressure on costs and technology.

Collateral management

Agree upon a Global security master utility

I would recognize the value the operations teams add to firms as much as the front office is recognized. Without both working well together no one succeeds.

Tying information across multiple systems to review and action (custom views, linkages)

Post execution trade match and affirmation/allocation matching continue to be separate processes. I.e. Trade confirm/allocation and Tradesuite Affirmation, or trade confirm/allocation and depository (such as euroclear) match status monitoring.

Complacency and reliance on "bums in seats"

too general a question

Organizations are under pressure to change as fast as or even faster than the market. We need access to more capabilities, decision making processes, operating models and new talent to keep up.

Infrastructure changes industry wide [firm by firm]. Resourced & properly understood by Mgmt.

Have operations folks think about strategy for the next 5-10 years and have all tactical solutions ahead be built in the context of achieving those strategic goals.

Bifurcate the processes into sets for immediate change (equity, fixed income, cleared swaps) vs. more complex types (ETFs, OTC Deriv) to effect change sooner and allow focus on more complex problems

23. Please provide additional thoughts on the Future of Operations

Blockchain is going to be a complete industry game changer.

Operations professionals must take larger role in efficiencies of new and emerging technologies. They will require a change in the mindset to be owners of a process.

There will be a tipping point where changes can no longer be done piecemeal. While painful and costly, it will be needed to become flexible enough to adapt to future changes.

We have a talent pipeline problem, a retention problem and a relevance problem. Operations work needs to be respected and career paths developed. Teams need to be encouraged to work together. Technology resources should be devoted - you cannot throw people at the problem and expect those people to join ops and then continue stale intensely manual processes.

DLG - there is zero need for a network to provide positions, transactions, etc. of each silo to other silos. On a DLG network it would eliminate this need.

I have been to a number of conferences that talk about the block chain (eg Bitcoin) and the potential use for investment settlements. To me this is like dreaming about flying to Pluto. Lets try to get to the Moon and then Mars first.

Future operational make up will see less "back office" staff due to the automation and more "middle office" staff creating the automation and driving change.

We need people to recognize the model has served well for many years and good advancements have been made. However we need to understand the model that has served us well in the fuiture and even today is not the model necessary for the future. Let's agree that the model has to change and don't constrain ourselves with trying to fix the model. Start clean, be creative and create something simple. There is a lot of work to do and it is challenging however let's do the right thing and not just play around on the fringes. We need revolutionary change in order to recognize material gains in operations.

n/a

The Future is harmonization and automation of global business processes - zero touch with data delivered point to point from the source.

Will continue to be ever evolving

N/A

The core needs can be addressed with a smaller set of solutions, but they need to be both flexible and inexpensive to allow for innovation on the Front Office side of the business. Operations doesn't exist without the front office.

We need to invest in the technology to keep up with change. If we don't, the current processes will not be able to handle the volume and it will dramatically impact all of our clients, negatively.

Need to reduce administrative work, consolidate functions to reduce senior managers

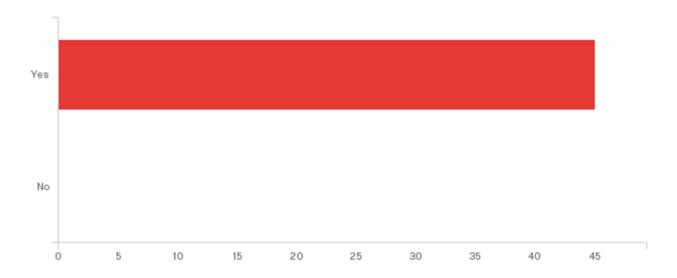
Operations continues to be a chicken or the egg dilemma. On the one hand vendors need client demand to build a solution, and Asset Managers want the technology built and proven before committing to it. Also, as we continue to look for end-2-end solutions, we as an industry need more vendor interoperability and integration. blockchain technology should bring a new focus to the industry and resolve many of the current downstream operational issues

Organizations will need clear insights into where in the new value chain they're best to compete. They will need to be using the latest developments in technology to enhance customer intelligence, improve customer

experience and reduce costs.

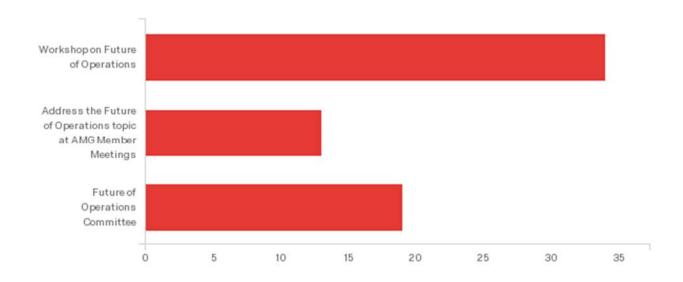
It will be extremely challenging for several more years. Trending in right directions. Utilities and peers are working more closely together out of necessity to meet Regulatory demand. "Do more with less" resources has a breaking point [compliance].

24. Do you believe that the Future of Operations topic should be a focus at AMG Operations (AMF):



Answer	%	Count
Yes	100%	45
No	0%	
Total	100%	45

25. If yes, would you participate in any of the following: (Otherwise skip) (Select all that apply)



Answer	%	Count
Workshop on Future of Operations	87%	34
Address the Future of Operations topic at AMG Member Meetings	33%	13
Future of Operations Committee	49%	19