

Future Midstream Automation Summit

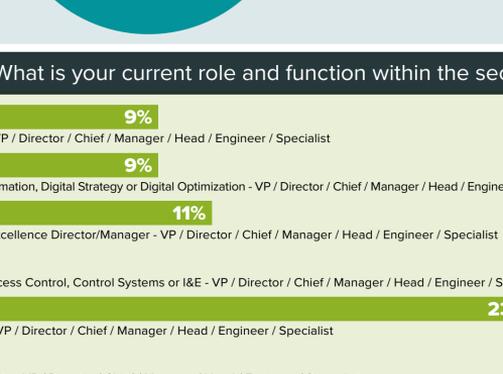
18 FEBRUARY 2020

HYATT REGENCY HOUSTON INTERCONTINENTAL AIRPORT, HOUSTON, TEXAS

In the run up to the Future Midstream Automation Summit taking place on 18th February in Houston Texas, we undertook a survey drawing upon the experiences of various automation leaders across Midstream operators, service companies, solution providers and consultants working on all aspects of the midstream sector particularly across North America.

Over 150 took part and this infographic gives real insight into automation and new technologies in the oil and gas sector as we enter 2020.

Q1 Where did our respondents come from?

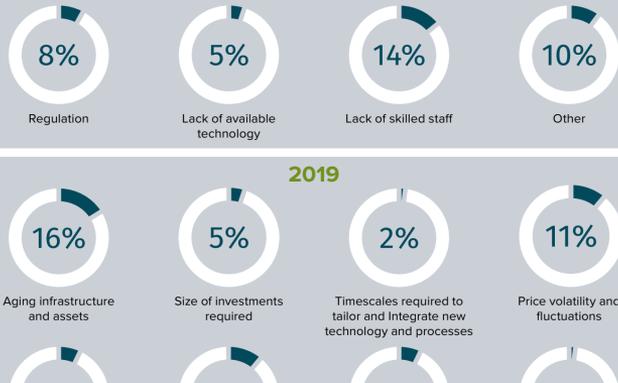


Q2 What is your current role and function within the sector?



Q3 What do you see as the biggest challenge ahead for the midstream sector?

2018



2019



Q4 How do you see automation and digitalization improving the sector?

Here is a sample of just some of the many answers we had:

"Lowering overheads"	"Labor reductions and Safety improvements"	"The midstream sector has assets that are widespread across a large geography. Those remote locations and assets need to be monitored, and many times it is not possible for a human to get to the locations. Digitization improves our ability to run the business by having IT / telecom infrastructure that can monitor operations without human intervention."	"Reducing environmental risks and maintenance cost and better security, safer operation"
"I see AI and Machine Learning as being the natural progression towards working smarter providing the opportunity to optimize human resources"	"Digital twinning is the most efficient way forward for making implementations safer and cost effective."	"I feel the initial cost is high, but the longer term improved technology will improve productivity and HSE outcomes."	"Reducing on site visits. Scaling a workforce to cover more assets with the same number of people."
"Ability to do more with less."	"The ability to operate more effectively and efficiently. When implemented correctly, to improve predictive, preventative, and corrective maintenance programs and to lower operation cost when compared to the investment. An investment, that when compared to the total cost of a facility, is minimal."	"It will improve communication and productivity"	"Humans make mistakes and they get tired, machines do not make mistakes and they work 24 hours per day and 7 days per week. Gaining deeper insights into the massive amounts of data being created by IoT and other edge devices will create never-before-seen efficiencies and process improvement"
"Having unprecedented real-time data being available and transmitted to operators and engineers from anywhere they are to improve processes and up-time."	"Improvement of validated and integral data, lots of data that comes in from SCADA is incorrect"		

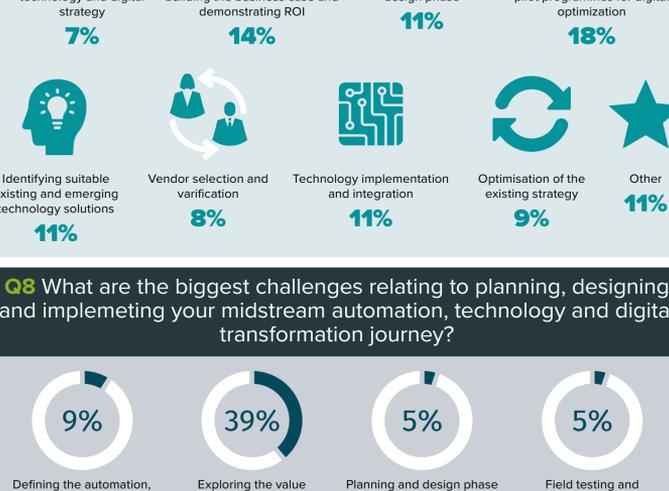
Q5 How has automation, technology and digital transformation helped your business through low oil prices?

"Less man hours"	"Lowered operating costs"	"It has helped us better monitor the assets, and take remedial actions when issues are not operating according to expectations. We have NOT decreased the number of people on staff, but we have better utilized their services"	"We have been able to execute projects with lower opex, allowing projects to get a greenlight and upping project returns"
"It has been critical to reducing cost of operations"	"Provided insight into areas where we could cut cost and increase margin in a declining price environment"	It has enabled us to work through and even grow at a time when others struggled do to our ability to optimize facility operating and show customers how to lower overall operating cost with the right instalment"	"We had to let go a lot of employees and automating most of the processes including preventative maintenance helped us overcome most of the duties with less personnel"
"Efficiency and effectiveness has significantly improved"	"We are realizing efficiencies we could only dream about before"		

Q6 As oil prices continue to stabilize how do you see automation improving the sector?

"Optimization and reduction of uncertainty. Immediate notification when products are out of spec."	"Lower operating costs"	"Improved efficiency"	"Labor and safety improvements"
"The industry needs to continue to build out a modern digital backbone, or as Bill Gates once said, "Digital Nervous System."	"Lowering total cost of infrastructure operations and providing better visibility across the value chain"	"I see automation and technology being one of the key considerations to operating in the sector under this new investment paradigm"	"ROI will be realized and better cash flow will allow more investment in these technologies"
"Owner-operators more willing to try new technologies which may have a higher capital cost than older technologies"	"Ultimately will help predict and stabilize the market making it less cyclical"	"We see it as a great improvement by getting up to the minute readings on your product and production. Where is the product shipped or moving, where is the problem for immediate modification correction and preventing future errors in the pipe line and in production in the plant. Plus providing the most accurate information the plant operators"	"Faster time-to-market, quicker reaction times, and most importantly we can pre-emptively solve problems before they become problems dramatically reducing production costs"
"Improve reliability, decrease operating expenses"	"Optimizing data flow and better data integrity"		

Q7 At what stage are you at with your midstream automation, technology and digital optimization journey?



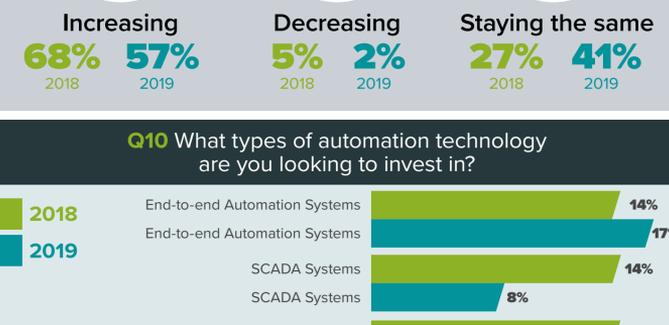
Q8 What are the biggest challenges relating to planning, designing and implementing your midstream automation, technology and digital transformation journey?



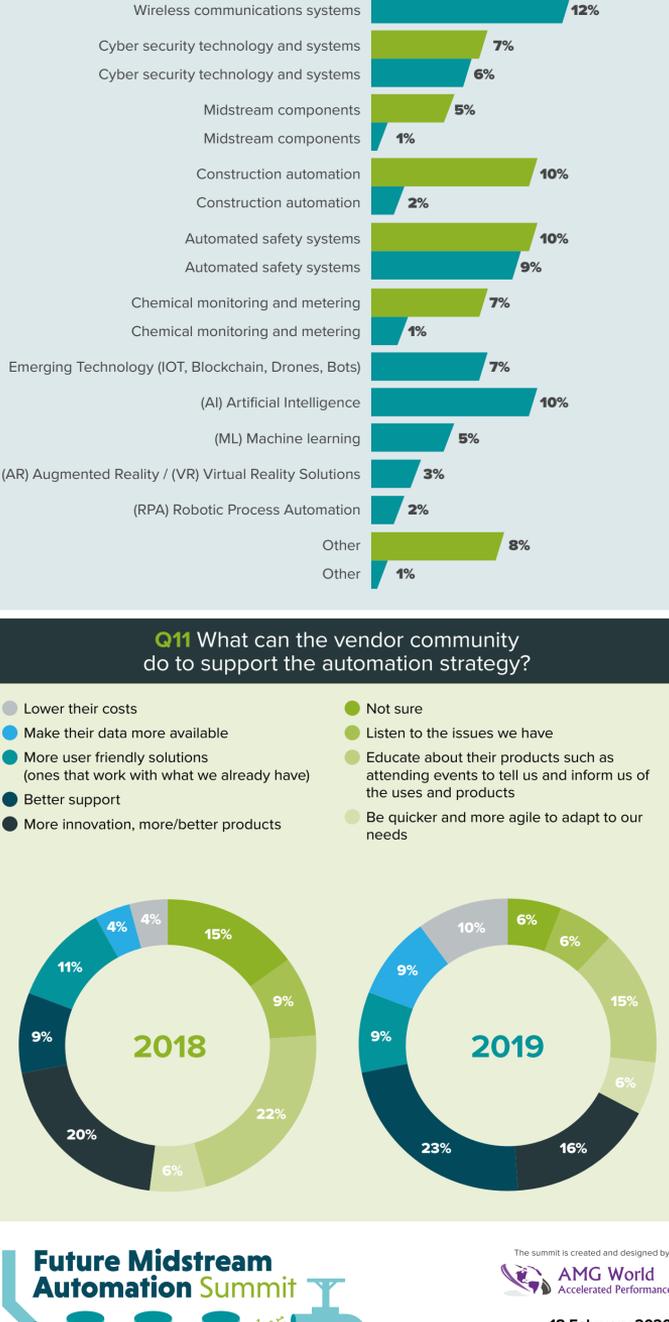
Q9 What do you expect to be the biggest ROI from your midstream automation project?



Q9 Within the next 2 years will your automation budgets for midstream automation be:



Q10 What types of automation technology are you looking to invest in?



Q11 What can the vendor community do to support the automation strategy?

