

Annual Conference Executive Summary

World of the Future: Key Drivers of Change

June 1, 2018 –Newton Marriott Hotel, Newton, MA

Moderator: Shirley Leung, Columnist and Associate Editor, *The Boston Globe*

Featured Speaker: Nav Singh, Managing Partner, McKinsey & Company

Panelists (see *Appendix for more information*):

- David Lucchino, Co-Founder, President, and CEO, Frequency Therapeutics and Chairman of MassBIO
- Daniela Rus, Professor and Director of Computer Science and Artificial Intelligence (CSAIL), MIT (Cambridge)
- Corey Thomas, CEO, Rapid7 (Boston)

The Future of Work- Nav Singh

Nav Singh kicked off this year's [MassEcon Annual Conference](#) with a conversation on the future of work, offering insights on economic growth and the ways in which technology and automation could change the workplace. Nav ultimately asserted his belief that if we prepare, the job market will be able to handle the growing demand of technology and automation.

His [presentation](#) began with the history of technological change as a preface to the innovation we are currently experiencing and concluded with his recommendations on how we can prepare for the future of work. Key takeaways from his presentation include the notions that:

- *Innovation has fueled economic growth.* Looking back at economic growth since the Industrial Revolution, he says, “GDP per capita has only increased. And it has increased at a rapid clip.”
- *The potential to automate affects both low and high-wage occupations in Massachusetts.* A McKinsey Global Institute [study](#) looked at over 800 occupations, 2,000 activities and 90% of global GDP to research what will happen to jobs as automation increases. He summed up the findings and said, “If you do unpredictable, physical things, you are likely in a better place. If you do anything that is predictable, it will likely be automated away.” Almost all jobs will be affected, some to a much higher degree than others.
- *Women have the potential to significantly increase the rate of economic growth.* He cited a powerful statistic: “If the workforce productivity and their sector participation was the same as men, in Massachusetts alone women would bring \$73 billion to the workplace.”
- *Private individuals, educational institutions, the government, and companies need to prepare for automation and innovation.* Nav sees these four institutions as the “key parts” that are all responsible for helping prepare individuals for a rapidly changing work environment.



Key Topics and Responses

Artificial Intelligence and Its Effect on Work

In a lab setting, David Lucchino sees artificial intelligence (AI) as an opportunity to help “scale solutions” to problems that human labor initially discovered through creative thinking. Corey Thomas also views artificial intelligence as a tool to support human labor by creating less buggy software to “make us more secure and the technological infrastructure that we rely on more sustainable.”

Daniela Rus was the AI expert on the panel, with decades of experience working with artificial intelligence in academia. She had an optimistic view of the future and said “I think the future is about people **and** machines, not about people **or** machines. It’s about how machines can help support us.”



Nav acknowledged that AI is a disruptor in business, citing the example of how Google and other search engines forced McKinsey to develop new knowledge because knowledge that was once exclusive is now accessible to everyone with a simple search. He ended the discussion on AI with the warning that “if you [companies] don’t change every year, you are in trouble.”

Preparing the Next Generation for the Future

When moderating the discussion on education, Shirley Leung expressed her concerns as a parent that her young children will not be taught the skills to make them competitive in today’s workforce. Daniela validated these concerns. She warned that other countries are making computer science and STEM mandatory curricula for students and that the U.S. is very behind. She believes that “we need to consider computational thinking and making as part of literacy in the 21st century.”

Although Corey agreed that skills such as coding are incredibly important, he made an interesting point about the disparities in the American education system. “It is very difficult to learn how to code if you don’t know how to read,” he said. Corey also suggested thinking of new ways to meet the needs of students, such as offering extra classes on Saturdays.

Nav challenged both teaching faculty and parents to keep up with the evolving expectations students have as they enter the workforce. He wrapped up the topic with a question to encourage educators and parents to self-reflect: “Are we teaching people what they need or what we are used to teaching?”

New Approaches to Learning

In the changing work environment, David believes that we need to be open to non-traditional learning paths. “The standard way for how everything has been done probably won’t be a recipe for success as people look to build their careers,” he said. A degree may no longer distinguish someone and automatically make them competitive in the job market.

Corey concurred, noting that “some of the most talented employees in the cybersecurity industry are hackers” that were self-taught and never even went to college. In the business field, Nav believes that targeted trainings are often more effective and economically efficient than going back to school for years to get another degree.

Role that Businesses Play in Educating the Workforce

In one of the highlights of the discussion, Daniela cited her favorite case study in retraining about a startup run by Rusty Justice, BitSource, which trained the miners in Kentucky who lost their jobs to learn how to code. The people who went through the training program were placed into fulfilling jobs with higher salaries. She thinks this could be done everywhere.

Corey described what his company, Rapid7, does to educate and invest in the incoming workforce. “Organizations can provide developmental experiences for teachers... We allocate a lot of our budget to development: skills and learning how to engage in different ways, cultural training and education.” He also made a push for learning in the workplace to maintain importance: “Relevancy is limited if they just carry their degree with them as opposed to things they learn along the way.”

David discussed the stigma that workers with associates or 2-year degrees face in the workplace, and they need ensure an emphasis on the skills rather than the education. “We need to have a balanced playing field... The current system may not be working for everyone.”

Political and Social Trends that Affect Industries

A main trend that the panelists acknowledged was globalization. Corey does not think that business, technology, and government leaders are doing enough to compete in the global economy. “It needs to be big issues, and we are not anywhere close to looking at how we develop a workforce that will be relevant over the next 50-100 years. That does not seem to be part of the core political discourse that is going on now,” Corey said.



Nav and Daniela believe it is essential for leaders from all different sectors to come together to promote change. Nav noted that “the government may not be in sync with everyone, but the other 3 pillars, business, teachers, and parents, need to be in touch too. They are not working synergistically right now.” The panel agreed with this assertion.

Hurdles for Growth in Massachusetts

Daniela spoke about Massachusetts’ growing competition with California as the ideal location for a startup. Each state has an edge in certain industries, and she emphasized the importance of Massachusetts maintaining its edge and continuing to be a good area to start a business.

Nav is concerned about the rapidly increasing housing and transportation costs in Greater Boston. “The reason why this place is special is because the best people from around the world want to come here. If the housing costs go through the roof, that will be an issue,” Nav said Corey agreed with Nav’s trepidation about the environmental factors and their impact on bringing business to Massachusetts.

Future for Work in Massachusetts

Despite the hurdles for growth, all four of the panelists had optimistic views on the future of work in Massachusetts. David credited the state government for being “constructive partners” for companies like Frequency Therapeutics in supporting their economic growth. Daniela also believes businesses receive great support in Massachusetts. She said, “Progress requires people, ideas, and resources, and we need excellence and support in all of these areas in order to continue to thrive,” Daniela said.

Massachusetts has momentum and great academic institutions that will continue to propel the state forward. However, Corey thinks the Massachusetts should aim to expand the workforce. He said, “We are doing quite well, but could be doing even better and include even more people in the economy,” according to Corey. “You can’t microplan innovation; you need to cultivate the garden so it can flourish.”

Click [here](#) to watch the highlight videos!



MassEcon champions Massachusetts as the best place to start, grow, or locate a business. Bringing the public and private sectors together, we work to create a supportive culture for business, enhance job growth, promote investment in communities, and spread prosperity throughout the state. 2018 marks MassEcon’s 25th anniversary. Learn more about MassEcon at www.massecon.com. The Annual Conference is presented by the Massachusetts Economic Development Foundation, the 501(c)3 affiliate of MassEcon.

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Appendix

Moderator:



Shirely Leung

Shirley writes on everything from the intersection of business and politics to gender issues in the workplace. She is also a WGBH news contributor appearing on “Boston Public Radio” and “Greater Boston,” and a regular guest on New England Cable News. Her columns have earned her many fans – and trolls on Twitter. According to *Boston Magazine*, in which she is named one of the 100 Most Influential People in Boston: “Love her or hate her, you had to read her.” Previously, Shirley was the Globe’s business editor, where she oversaw its award-winning coverage of the 2008 financial crisis. Prior to the Globe, she was a staff reporter at the *Wall Street Journal*.

Featured Speaker:



Nav Singh

Nav leads the state and local work for McKinsey’s Public Sector Practice in North America and is a leader in the company’s Pharmaceutical & Medical Products and Strategy & Corporate Finance Practices, with a focus on innovation. Nav brings deep business expertise in strategy, innovation, operations, business development, and risk. Additionally, Nav spearheads McKinsey’s knowledge initiatives on R&D productivity in the pharmaceutical industry and leads its Center for Asset Optimization. He is the immediate past chair of the board of the Greater Boston Chamber of Commerce, a member of Governor Baker’s Task Force on the Future of Transportation, and hosts Imagine Get-Togethers that convene cross-sector leaders on cutting-edge topics, such as synthetic biology, commercial applications of drones, and the future of space exploration.

Panelists:



David Lucchino

David is an entrepreneur and business leader currently at the helm of Frequency Therapeutics, a clinical-stage, venture-backed company that is advancing a novel way to enlist the body’s native regenerative abilities to treat chronic conditions, including noise-induced hearing loss and diseases of the skin, muscles and gastrointestinal tract. David’s background includes having co-founded and led Semprus Biosciences, a medical device firm; serving as CEO of Entegra Bio; and Senior Executive at Polaris Partners. David is Chairman of the Board of Directors of MassBio, the voice of the biotechnology industry in Massachusetts. He started his life sciences career as a co-founder and managing director of LaunchCyte, a biomedical intellectual property acquisition and development firm.



Daniela Rus

Daniela’s research interests focus on robotics, artificial intelligence, and data science, specifically developing the science and engineering of autonomy. The applications of her work include transportation, manufacturing, agriculture, construction, the environment, underwater exploration, smart cities, medicine, and in-home tasks. Daniela is the Director of the Toyota CSAIL Joint Research Center whose focus is the advancement of AI research and its applications to intelligent vehicles. She is a member of MIT’s task force on the Future of Work, the Toyota Research Institute advisory board, a Class of 2002 MacArthur Fellow, and the recipient of the 2017 Engelberger Robotics Award from the Robotics Industries Association.



Corey Thomas

As President, CEO, and member of the board, Corey Thomas leads Rapid7 (NASDAQ: RPD), named by the *Boston Business Journal* as the Commonwealth’s third largest cybersecurity company. Corey also serves on the board of the newly- formed Cyber Threat Alliance, the non-profit association of cybersecurity companies. His previous positions include VP of marketing at Parallels, Inc., a virtualization technology company; group project manager of the Microsoft Server and Tools division, launching the worldwide availability of SQL Server 2005; and steering product planning for Microsoft’s data platform; and a consultant at Deloitte Consulting. On the civic front, Corey is a member of the Board of Blue Cross Blue Shield of Massachusetts.