

# Beyond the SMARTPHONE

**TECH INDUSTRY INNOVATORS ARE REIMAGINING MOBILE AND ENVISIONING A HANDS-FREE FUTURE. > By Marc Millstein**

Predictions about the future and the influence of technological innovations seem to know no bounds and often sound implausible. However, the futuristic notions of technological advances have to be taken with all seriousness considering that many of the things that are taken for granted today were unimaginable a decade or more ago. Today, extremely rapid advances in artificial intelligence, machine learning, robotics, natural language processing, and other fast maturing technologies are expected to overturn common practices by retailers and consumers in fundamental ways. As visionaries imagine and create new technologies, some implications for the retail and consumer goods world include the following scenarios:

- The executive suite and other management levels will shrink, perhaps dramatically, as certain positions will no longer be required for making key strategic and tactical decisions. Advanced analytics and machine learning will precisely identify emerging sales trends, accurately track and analyze product movement, and in near real time determine most profitable next steps with near 100% precision.
- Use of wearables will continue to surge but so too will implanting smart chips into the body to provide a wide range of powerful benefits, as well as risks. The merging of technology with the human body will provide instant access to encyclopedic quantities of information, new ways to communicate, purchasing power, security and other functions. The practice of implanting chips into the body for such functionality is already taking place in other countries and will soon take hold in the United States.
- Robotics will enhance and take over even more activities now performed by humans, including providing customer service, restocking store shelves preemptively, and bolstering security inside and outside the store, among many other services. The impact of robotics on the supply chain and in warehousing is well known and well established. Now it is coming inside the store in a big way.
- Putting aside the fact that Apple sold 50.7 million iPhones in its second quarter ended April 1, after selling 78.3 million of the devices during its holiday quarter, smartphones will eventually become as distant a memory as floppy discs and rotary phones. The mobile

devices that today capture so much attention will be replaced by much smaller “devices,” that are driven by natural language processing and immense processing power. They will no longer be hand-held.

As unlikely as this later point seems at the moment, folks like Facebook founder Mark Zuckerberg openly discussed a smartphone-free future recently at the company’s annual F8 developer conference. Facebook is betting on a future of where augmented reality use cases are prevalent and impact everyday lives with smartphones giving way to other types of wearable devices.

Such a change would create amazing new possibilities and challenges for retailers who have already struggled with how to win and make the right investments during the past decade or more of radical technology-driven change. These changes have spanned the rising dominance of online shopping, the need for advanced analytics to drive nearly all aspects of the business and the sweeping impact mobile devices on customer shopping behavior.

But much more is coming and coming quickly, according to retail executives and industry leaders. The impact of change in the next three to five years is projected to be several orders of magnitude greater than anything before.

“There is a company in Scandinavia already embedding chips in employees’ hands for access control, as a security badge, to pay for purchases,” said Greg Buzek, president, IHL Group, an analyst firm based in Franklin, Tenn. “Special forces also is testing implanting a chip into the brain so that a Navy SEAL who would have had about two hours of intense concentration at any one time can now have 20 hours a day of that level of focus. I believe we will go that way. A bit scary but we are going into that direction.”

Special forces may appear to be far away from the business of operating retail stores, but is it really? Many of the technological innovation companies now taken for granted were developed by and for the military. Now, the speed of



▲ Greg Buzek

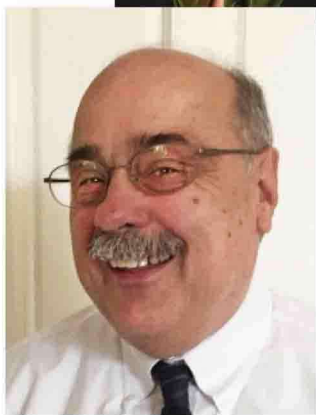




◀ Ronny Max



▲ Kelly Stickel



▲ Bob Graham

development to real-world application is accelerating, shortening the progression from unthinkable to reality.

A senior executive at one of the country's largest retailers is more than convinced that the power of analytics and machine learning already available will lead to the elimination of some executive board and other management positions.

"If Blackrock can replace stock-pickers with machine intelligence, we can probably replace merchandisers with machine intelligence as well as long as systems are in place to verify that execution is perfect," the executive, who asked to remain anonymous, said. "In the executive suite you are going to see fewer merchandisers and a much smaller hierarchy. There may even come a time when executives are no longer needed — at least not in the way they are today," he added.

On the other hand, a much greater percentage of executives and management will be needed for technology, for ensuring regulatory compliance and for managing the business impact of the Internet of Things, he said.

"The percentage of technology people as a percentage of enterprise management positions will continue to increase as an even greater speed, while the number of executives overseeing traditional roles will decrease. It is inevitable," he added.

Ronny Max, author, *Behavioral Analytics*, and founder, *Silicone Waves*, an analytics knowledge company, pointed to natural language processing as a major upcoming game changer. Natural language processing will propel the ability to harness the power of the Internet of Things — the interconnection and communications between appliances and devices — and equally or even more the possibility of humans to much more easily leverage devices for a myriad of purposes.

"Natural language processing will allow people to speak to devices or machines to gain knowledge, to pay for purchases, to place or change orders, to do so many things. And it is coming, coming soon," Max said.

Asked about mobile phones and how people will communicate in the near future, Max said wearables — she believes glasses — combined with natural language processing that can "read" and respond to human speech will replace smartphones and the need to hold anything in the hand.

"I personally think it will be glasses. I think the power of the voice, combined with virtual reality and machine learning, means that people will be able to use their voice to see a picture of what they want to buy, to see details, ingredients, envision scenarios, whatever," she said. "It is already happening."

Bob Graham, vice president, information technology at *BevMo*, the wine and beverage category killer based in northern California, similarly pointed to speech, artificial intelligence and machine learning, and the emerging ability for analytics-based solutions to learn and hence to make smarter and smarter decision as the next disruptive movement in the food retailing world. "Intelligent platforms are now developing an awareness to make decisions and that ultimately will make decisions better than human," Graham said.

Machine learning and artificial intelligence is already making businesses much more productive on the back end in areas such as processing and forecasting, he said. But that analytics power is impacting the store also in areas such as assistance for staff associates and personalized service for shoppers.

"That is where robotics and artificial intelligence can do a phenomenal job, and hence the adoption will happen much quicker than, say, cloud computing. I think it is going to happen virtually overnight," Graham added.

Kelly Stickel, CEO and founder of *Remodista*, a social think tank on global retail disruption, also pointed to the Internet of Things as a key change agent already transforming retail.

"I think a lot of our customer points of entry will come through Internet of Thing devices. Omnichannel retailers will continue pushing messaging out, but customers will have 100 ways to receive what they want," she said.

The impact of the Internet of Things will come at retailers in three areas, she predicted: the back-end and the ways in which products and orders are better processed and fulfilled; in-store and digital, and the potential for more powerful store experiences; and third, customer wearables and the technologies around product expansion," said Stickel.

"The future of retail is about higher touch point experiences — for great customer engagement moments. Mobile coupled with wearables and IOT will connect the dots," she noted.

Asked specifically about wearables and smartphones, she replied: "There is no reason we should need to be holding anything that takes our hands away," Stickel said.

"It could be on the arm — a bracelet? Or a projection from your glasses! Or something on your skin! Also, voice will be huge. There is no reason for something to have to translate what we say. Instead, devices will understand our voices and respond to provide us with what we want or are asking for," she said. While predictions about the future can seem outlandish to those living through a period of considerable disruption, one lesson from history is that which can be imagined has a way of coming true. And oftentimes sooner than expected. **RL**