In June 2018 we announced at HxGN LIVE in Las Vegas that Hexagon Manufacturing Intelligence is building an ambitious new strategy around Smart Factory Solutions. What does that mean for you, our MSC Software customers? For a start, it is important to recognize that we are going through a fourth industrial revolution called Industry 4.0. This is the name given to the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of Things (IoT), cloud computing and cognitive computing. The previous three revolutions were mechanization in the 18th century, mass production in the early 20th century and computing and robotic automation in the late 20th century. The term ‘smart factory’ is a convenient overall term for a set of industry initiatives that our customers are pursuing to deploy new advanced technologies and digital
transformation across the entire enterprise to drive
the next wave of productivity and quality
improvements in product manufacturing. Capgemini,
an Industry Analyst company, calculated in a 2017
report that Smart Factories could add up to $1
trillion in value to the global economy by 2022. As
well as new technologies, I believe a mindset
change is coming.

Let’s take a look at a few of our Hexagon Smart
Factory technology initiatives in some more detail:

1. An important element of a ‘smart factory’ is
   **Connected Devices**. Everyone has heard of the
‘Internet of Things’ (IoT) when it comes to
consumer devices like thermostats, light bulbs,
and smart refrigerators in our homes. But this
concept also makes sense for our customers like
you as you seek to use advanced new
technology to connect all of your devices in your
factory so that you can monitor and control them
remotely, and, by looking at production data and
sensor trends even predict when the machines
will need servicing.

2. Another important ‘smart factory’ descriptor is
   the so-called ‘**Digital Thread**’, a simple, but
powerful, concept of connecting sources of
data to consumers of that data in order to
create value. Today, many of you our customers
have various silos of information. You have
plenty of data, in fact some of you are drowning
in massive volumes of data, but the challenge
you face is how to use this data to create value.
The ‘digital thread’ assists in breaking down
these silos, letting the data flow smoothly
through your organization to the teams and
tools that need it in order to make decisions
and take action. An example of this is Hexagon
Manufacturing Intelligence’s integrated
manufacturing cell offering where we are
breaking down the silo around metrology
information and flowing product quality data
“upstream” in the manufacturing process to
make corrections and improvements to the
manufacturing process, yielding even better
product quality on subsequent parts. Another
example of this is Hexagon Manufacturing
Intelligence’s Die Build Improvement project.
Here we will combine cloud-of-point inspection
data from metrology with CAE tools from MSC
and Forming Technologies Inc. (FTI) to more
quickly and accurately calculate the die face
geometry needed to correct for springback in a
die set (see the FTI forming simulation
prediction on the next page). Further
capitalizing on our ‘digital thread’ and breadth
of products, we will pass that geometry to our
CAD/CAM production software in Vero to
create a new cutting routine for the machine
tool to cut the corrected die set.
3. Another promising technology under the ‘smart factory’ umbrella is **Artificial Intelligence (AI)** – sometimes called machine learning (ML). As ordinary consumers, we see AI/ML in practice every day with technologies like dynamic routing in navigation systems, face recognition in social media apps, and fraud detection in credit card transactions. Our customers want to use the advanced mathematical techniques of AI/ML to analyze the massive amounts of data that you have collected over time in order to gain some insight, make some predictions, and potentially even take direct autonomous action without human intervention.

At Hexagon, our newly announced Xalt framework provides a powerful technology base for us to expand on our metrology, CAD/CAM and CAE solutions and help solve our customers’ most important problems. That is the goal of our new Smart Factory Solutions team that I lead. With you, our customer’s help, I believe that we can transform current industrial age factories and processes into highly productive and increasingly autonomous ‘smart factories’ of the future. The factories of the future must be flexible, modular working environments with data-driven ecosystems that embed agility and quality into every phase of the production process.

We, at Hexagon, have backed up our ‘Smart Factory’ strategy by investing approximately €90 million in a new 52,000-square-meter, state-of-the-art production facility in Hongdao, China, that we announced in 2017 to demonstrate and embody our initiative. It will be completed in 2020. The new site, which will primarily produce metrology systems for our Manufacturing Intelligence division, utilizes Hexagon’s smart manufacturing technologies to produce and calibrate the systems, as well as house software development and customer support teams covering our wider Hexagon portfolio.

Finally, I believe that three words will encompass the Smart Factory in future:


If you want to know more about this exciting initiative, do contact me directly or visit HxGN LIVE 2019 in Las Vegas to hear of our exciting new product releases in this area.