

MOVING TO SIEMENS XCELERATOR AS A SERVICE

REMOVE FRICTION & SPEED INNOVATION

THE IT PERSPECTIVE

Engineering teams can be stuck in the past, using capable—but old-fashioned—software to do their jobs. These tools often require expensive desktop machines, create data that's stuck in silos because of formatting and access issues, and limit the team's ability to innovate. And too often, these tools are based on older technologies that are difficult to move into a modern, connected environment, creating an unnecessary burden on IT resources.

Siemens' Xcelerator as a Service is an open digital platform with Siemens' engineering, design, simulation, and manufacturing apps, connected using domain-specific interfaces. The platform handles the connections, and the business model offers the flexibility to scale up and down as needed and automatically delivers the latest software and security updates. Connecting from anywhere, anytime and from any device means faster innovation in a more productive and collaborative environment.

PITFALLS OF A LEGACY ENVIRONMENT

Six months ago. Sofia was overwhelmed: too many users to support, not enough time. As the Engineering department's IT resource, she was responsible for hardware, lost data, viruses and other security threats, and planning and carrying out software upgrades. There never seemed to be time to plan for future technologies at Modern Robotics.

Modern Robotics (MR) is a hypothetical firm that wants to revolutionize in-store retail using autonomous robots. It's a 30-year-old company with many legacy tools: Accounting, HR, and purchasing use one ERP system, but a recent acquisition uses another. Engineering has multiple CAD systems for different functions and many CAE solutions. MR uses additional software tools to operate its manufacturing plants, support sales, and manage service calls — it's a spaghetti diagram when



Sofia lays it all out.

MR's management determined that a lack of collaboration between departments—likely due to incompatible IT systems—caused delays in the most recent product launch. Requirements were poorly communicated, and a misunderstanding about supplier parts availability led to an expensive late-stage redesign. They wanted to eliminate this friction on the new project, the MRone, starting with Sofia's engineering domain.

Sofia has been asked to help the MRone Engineering team create a new engineering tool infrastructure. Management hopes that using modern technologies, methods, and workflows will break down some of these silos and make data more accessible. They believe this will get a better MRone to market faster — and, ultimately, enable all of MR to be more agile and responsive.

FIRST, THE AUDIT

Sofia started by looking at the tools being used in Engineering. What is it, who is using it, what data does it create and where does it go, what it's connected to (if anything), and what it should be connected to, if possible?

She discovered that Engineering used many mechanical and electrical CAD packages; CAM from another supplier, various CAE tools, and many spreadsheets. She saw no data or workflow management and no central repository, which told her there was no control system. Most collaboration was via Zoom meetings or documents shared in emails and cloud folder schemes ... chaos. But there was good news, too. There were few paper-based processes, so most data was already digital and could be shared with others.

Sofia came at this from an IT perspective. She knew what was possible with today's platform, cloud, in-house coding, and other technologies and the benefits of managed services. Sofia set about designing an architecture that she believed would make engineering more efficient, connected, and flexible. And she was confident that she could implement these tools in the six-month setup period for the new MRone project.

CAD, THE CORE OF ENGINEERING

Sofia's investigation showed her that legacy CAD, CAM, and CAE tools had been used on MR desktops for decades. They weren't current versions, and many recent technology and user interface improvements just weren't there. And they were locked onto desktops, which didn't match how Engineering wants to work today. They want to work from anywhere, on any device, and Sofia believes that cloud-native apps are a better long-term solution.

In addition to being more accessible, cloud-native apps use modern architectures that are more open and flexible than desktop products. They usually use standardized application programming interfaces (APIs), are modular in design, and can integrate with other apps and data types. The commercial model is typically a subscription, which can be a cost-effective alternative to desktop versions. Together, this is called Software-as-a-Service, or SaaS.

Security often comes up when considering cloud applications. Sofia sees SaaS improving MR's overall security because IT experts manage these installations to very high standards, higher than MR's IT department can meet. Also, cloud-based work processes and tools minimize emailing and other unmanaged sharing of sensitive data, limiting the risk of data breaches.

From IT's perspective, SaaS is a win. Users can access their apps via a browser. IT has less infrastructure to manage in-house, saving both money and time. It would also have fewer upgrades to coordinate and better security, removing two consistent sources of stress.

Sofia steered her Engineering domain experts to a SaaS platform solution. She worked with designers, engineers, and analysts to identify the best-of-breed solutions for each discipline needed in the overall Engineering IT strategy.

WORKING TOGETHER, SMARTER

Engineers often work in one-person silos but eventually must work together to finish a design. What's the best mechanism for ensuring safe, secure, yet comprehensive communication about design concepts, purchased parts, and service issues?

When the Engineering team listed their CAD, CAM, and CAE app needs—and Sofia pointed out the benefits of underlying platform technologies—they realized that the platform was also the answer to the communication challenge.

Platforms come with the ability to transfer data from one node or application to another. Its APIs can bring data across domains, speeding up existing processes and serving data to a community of connected users. If the platform MR chooses doesn't have a specific connection to an app, Sofia was confident that her team could create one via in-house coding and third-party solutions.

PUTTING IT ALL TOGETHER

Her bosses asked Sofia to create an IT infrastructure that made Engineering more productive and connected. They wanted designers to spend less time on the IT aspects of their jobs and more on producing innovative ideas supporting MR's ambitious growth plans. She believes an integrated engineering platform meets many of these needs. Cloud technologies, software-as-a-service purchasing, and integration (or at least data transfer) would address the technical issues and start to foster cultural changes as well.

Sofia's plan to connect data, processes, and tools from concept design to product launch and after-sales service was to

1. select a platform that supports Engineering and can grow into the rest of the enterprise
2. build processes with Engineering that take advantage of the platform's built-in cloud connectivity, collaboration, security, and integration tools
3. use the vendor's managed services to deal with cloud resources, software upgrades, uptime, multi-device user experiences, security, and scalability, and
4. focus MR's IT resources on value-add activities like specialist app building.

MOVING TO SIEMENS XCELERATOR AS A SERVICE

After an in-depth evaluation, the Engineering team settled on the Siemens Xcelerator as a Service platform. It provided best-of-breed cloud-native apps, which meant people were confident they could do their jobs, from anywhere, at any time, on any device. The designers and engineers are using Xcelerator's mechanical and electronic systems modeling apps and its software and simulation capabilities.

The Engineering tool selection process took several months. Sofia and her Engineering colleagues spent several more months on the initial implementation and training. Fine-tuning took place during the initial phases of the MRone design sprint.

Even with these changes, Engineering is meeting its MRone deadlines. Sofia and MR's management consider this project a success and are now looking at how to roll Xcelerator as a Service out to more users.

WHAT'S NEXT?

One of the first targets is to roll Xcelerator as a Service out to MR suppliers, especially those working on the MRone project. The first step was to remove paper — emailing sketches, lists, and other documents — to focus on more digital workflows to ensure that everything is managed and secure. Nothing is lost, and everyone is working on the latest design iteration. Sofia and her team are working to qualify suppliers, assess their digital readiness, and, where appropriate, invite them onto the platform.

A DAY IN THE LIFE ... NOW

Sofia's days are very different now that the initial Xcelerator as a Service implementation is nearly complete. Hardly anyone asks her for login, hung software, or similar help since the apps run in a browser. Siemens' Xcelerator Managed Services supplies and supports the hardware the apps run on, along with their updates, so that's an unwelcome part of her former job that's just ... gone. She's using her time to plan for future IT expansions and exploring Xcelerator's low-code Mendix capabilities to customize apps for her Engineering colleagues.

Sofia is confident that the Engineering department's infrastructure is open, integrated, flexible, and agile. It will support the MRone project and continue to expand across Modern Robotics into other projects.

Cloud, Connected, SaaS. Changing how designers and engineers work to be faster, smarter, better.

Read more about MR and get the designer and engineering manager perspectives [here](#).

Schnitger Corporation created this brief at the request of Siemens Digital Industries Software, Inc. For more information or to comment, please visit www.schnitgercorp.com