

HCL's Secure by Design Approach Accelerates Organizations' Digital Transformation

CIMdata Commentary

Key takeaways:

- *Bringing a modern product to market requires a diverse set of skills to satisfy customer expectations and regulatory requirements.*
- *Security risks are found in all aspects of business: the systems and platforms used to develop products and with the products, their connectivity, and operations. Managing these risks requires a strategy that can evolve as the threats evolve.*
- *HCL has been providing product development services to leading companies for four decades helping them get products to market faster, at lower cost, and with advanced features.*
- *CIMdata expects significant changes in how companies operate based on the response to the current COVID-19 pandemic. HCL's Fluid Digital Workplace helps retain productivity, while ensuring employee safety.*

Getting the right resources in place to bring a product to market or quickly scale capabilities is a challenge that keeps executives up at night. The issues and horror stories of attempting to employ the right technical people is a common challenge CIMdata hears about every day from its industrial customers.¹

CIMdata had the opportunity to converse via email with Mr. GH Rao, HCL's President of Engineering and R&D Services (ERS). Mr. Rao who holds a bachelor's degree in electronics and communication joined HCL in 1980. He initially worked on an R&D team developing hardware sub-systems for micro/minicomputers, later becoming chief architect of multi-processor systems. In the early 1990s he was responsible for leading technology adoption programs and engineering teams at the HCL-Hewlett Packard joint venture. In 1996 HCL Technologies was formed and Mr. Rao took on the challenge of building business lines around core engineering services like system and VLSI design services. Over the years he evolved the business to address industry verticals and added more services.

CIMdata: *It has been few years since HCL acquired Geometric. Can you talk about some of the successes you've had together as a consolidated group?*

GH Rao: HCL's acquisition of Geometric was a truly synergistic transaction. Geometric brought end-to-end capabilities in PLM consulting, system integration, and mechanical and manufacturing engineering to HCL which perfectly complemented our engineering R&D and digital offerings.

We have been able to successfully take our combined portfolio of offerings to newer segments. While Geometric had a strong presence in the automotive, aerospace, and industrial segments, HCL has deep presence in hi-tech, medical devices, and manufacturing. With this acquisition, HCL was able to market its product engineering and testing offerings to erstwhile Geometric customers—like in the case of a Japanese industrial major, where HCL expanded the engagement to provide services in embedded software, application development, AUTOSAR, ECU development, and digital connectivity solutions like M2M, etc. Today, HCL supports this

¹ Research for this commentary was partially supported by HCL.

customer across all major business units and is the preferred Engineering Services Provider for the customer. Similarly, we have made strong headway in expanding our PLM customer base into domains like hi-tech, medical devices, retail, and process industries by leveraging HCL's access to these customers. To give you another example, for one of our leading medical technology customers, we created a unified system for product development and design control across platforms through successful ALM-PLM implementation.

Apart from cross-selling, this acquisition has allowed us to deepen engagements and streamline operations within our common customer base. To give you another example, we are now supporting a leading European car manufacturer through its large-scale digital transformation by leveraging our combined service capabilities and automotive domain expertise.

The acquisition also brought a strong IP and product portfolio into HCL. Our Industry 4.0 practice has been supplemented by the technology that Geometric brought to HCL which has created a strong differentiation for us in this space.

CIMdata: *We are seeing many companies investing heavily to integrate the siloed engineering, manufacturing, and after sales functions to create world-class experiences for customers. What role does HCL play, as customers are trying to create digital threads and digital twins?*

GH Rao: Companies, especially in manufacturing have realized that integration of traditional silos of engineering, manufacturing, and after-sales is critical in the new customer experience era. The traditional building blocks and conventional workflows don't allow such flexibility.

Companies must implement product-level and process-level twins and tie them together digitally to unlock new value creation opportunities as well as streamline operations for improved efficiency.

However, such implementations are fraught with challenges like heterogeneous system landscapes, complex integrations, data flow across organizational boundaries, variations in data semantics, lack of uniform standards, etc. Organizations require a broad range of expertise, experience, and technology to successfully operate—and this is what HCL brings to the table.

Customers have already seen success with our approach. To give you an example, we operationalized a digital twin for a leading kitchen equipment manufacturer which was facing stiff competition in new markets. Our solution enabled the customer to grow revenue by unlocking new revenue streams. Another example is from a leading wind turbine manufacturer which saw a positive impact on efficiency through the predictive maintenance solution we implemented for them by creating digital twins of field-deployed controllers. The remote tracking and analysis of vital controller parameters also resulted in significant cost savings for the customer.

CIMdata: *Maintaining information security is critical as we evolve to larger eco-systems and connect different systems, platforms, and devices. Can you discuss some of the potential security challenges that organizations typically face, or should be careful of, as they embark on this journey?*

GH Rao: The biggest security challenge for a connected eco-system is that you are only as strong as your weakest link. A single security breach in a remote device can make the entire eco-system vulnerable to a threat. As an organization, you may have a robust and mature security posture but what about the rest of the ecosystem? The situation is further complicated

by the distributed nature of the devices, cloud platforms, supply chains etc. participating in the eco-system which make the creation of a unified approach to security challenging.

The key tenet of a successful eco-system is the ability to enable seamless information exchange across the entire landscape. However, securing this information exchange across organizational boundaries, insecure public and private cloud interfaces, remote low power sensors, and devices can be a big challenge.

Another challenge is that threats are evolving at an accelerated pace and with a level of sophistication never seen before. A significant investment in security may not necessarily lead to a proportionate decrease in risk as threats keep evolving.

Due to all these challenges, security can sometimes be seen at cross-purposes with the exact digital transformation that it is supposed to enable.

These challenges are different from the conventional security challenges that organizations used to face. Traditional security approaches will be inadequate to counter these challenges. Today's enterprises are much more dynamic and hence need a radically different outlook and a constantly evolving proactive security strategy.

CIMdata: *How can HCL mitigate or avoid potential digital transformation security issues, while at the same time achieving customer cost and time-to-market goals?*

GH Rao: Our "Secure by Design" approach is the key to tackling security issues in a digital transformation program. The aim is to create an end-to-end security apparatus encompassing infrastructure, cloud, applications, data, communications, devices, network, etc., to create a complete cyber-physical nexus of security across the entire ecosystem.

For this, HCL offers a full spectrum of security services from strategy to managed services to accelerate organizations' digital transformation without comprising on security.

To be truly secure, security needs to become a key consideration in the entire product design and development lifecycle so that every product is engineered for security. Security engineering is a special area of focus for HCL, especially device security which involves securing the devices from attacks, ensuring confidentiality and integrity of device data, and availability of the device. This has become critical in areas like medical devices and industrial equipment where regulations are making security compliance mandatory.

CIMdata: *What is the key message that CIMdata should be telling our joint clients about HCL?*

GH Rao: HCL is in a unique position to offer technical consultation and implementation services. We have over four decades of experience in working with global leaders across domains.

We have end-to-end capabilities in product and digital engineering with a proven record of creating world-class customer experiences—which makes us an ideal partner for organizations to begin and further their digital transformation journey.

CIMdata: *COVID-19 is impacting every part of our lives today. When we return to the "new normal," what will it look like? How will HCL be leading in this emerging environment?*

GH Rao: Global businesses across most industries are under immense pressure due to the global nature of the pandemic, as the world grapples with its high intensity and long duration. As the crisis looms, it will fundamentally alter the business landscape and could accelerate the demand for a location-agnostic work approach via digital workplace services, collaboration

platforms, and cloud infrastructure. Enterprises will move towards optimal utilization of their assets.

Enterprises will need to transform into 'Fluid Enterprises' that are flexible, agile, and connected. HCL Fluid Digital Workplace helps retain productivity, deliver equitable experience, and enable social distancing.

Also, securing information exchange across the ecosystem is a challenging issue. For this, HCL offers a full spectrum of security services from strategy to managed services to accelerate organizations' digital transformation without comprising on security. Telco's will aggressively invest in 5G due to greater need for connectivity and bandwidth.

Organizations will look to invest in technology enablers such as AI/ML, 3D printing, AR/VR, cloud, analytics, automation, as there would be increased focus on resilient supply chain and flexible manufacturing to cater to changing demands.

Demand for simulation and PLM will increase along with decentralized small manufacturing units near customers. Enterprises need to perform a cost benchmark and spend analysis to redefine their cost structure. Business models would be tweaked to take benefits of immediate opportunities to spotlight quick hits and assure immediate results.

Conclusion

CIMdata would like to thank Mr. GH Rao for the insights he provided in his responses to our questions. CIMdata has worked with HCL for many years and believes that their engineering and PLM capabilities provide critical services that industrial companies need to survive and thrive in local and global markets.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at <http://www.CIMdata.com> or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.