

# IoT Design

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**K.C. Liu**

Founder, Chairman, and  
CEO of Advantech

# Enabling Deeper, Domain-Specific Integration on the Industrial IoT

*K.C. Liu on the present and future of Advantech and the Internet of Things*

With more than 40 years of experience in the electronics industry, K.C. Liu – Founder, Chairman, and CEO of industrial computing manufacturer Advantech – has seen wave after wave of market trends like the IoT. Here, the electronics magnate provides insight on why the IoT market has been slower to develop than initially thought; how a dire need for solutions integrators is impacting the industry's growth; and how Advantech is enabling newcomers to the market through platforms like WISE-PaaS and events like the IoT Co-Creation Partner Conference.

**IoT DG:** *The IoT has taken longer to reach critical mass than initially predicted. As the market continues to unfold, some organizations may be reluctant to go “all-in.” What do you view as the current barriers to success for ubiquitous IoT?*

**LIU:** Three to five years ago people thought IoT was coming. But actually it’s taken much longer. That’s because, until now, the IoT supply and value chains were immature. To support the IoT you need a value chain, but the value chain still needed time to unfold. That’s the reason IoT didn’t move faster.

Let me explain the value chain of IoT, what is already mature, and what is still growing. In the IoT value chain, infrastructure-as-a-service (IaaS) providers like AWS or Microsoft Azure are already mature and have been for some time. This is a foundational part of IoT, so that’s step one.

Then comes the industrial platform-as-a-service (PaaS) market. For example, Advantech’s WISE-PaaS is an industrial PaaS, and, of course, there are other PaaS providers like PTC or GE Predix. I would say that this year, 2019, is when those industrial PaaS offerings will become mature.

But what is not mature? I would say the biggest problem is solution integrators, or SIs. For industrial IoT, users who want to make a system need SIs. We call these companies domain-focused SIs. They need the IaaS and PaaS parts of the value chain to make a system. But in Asia, for example, there are not enough SIs and the ones that exist are too small. Without domain-focused SIs, IoT solutions cannot be developed and deployed quickly.

Some bigger companies do use in-house SIs. For instance, a company with 100 IT people probably has enough to create these systems completely in house. However, those internal resources still need to learn how to use IaaS, use PaaS, and integrate the complete system. So that kind of learning is still ongoing. So I would say the problem is the SI sector.

In the IoT value chain we’ve also seen a need for what we at Advantech call solution-ready platforms (SRPs). These are semideployable software modules dedicated to a specific application or function. Right now, SRPs still need some time to mature, which will happen this year or next year.

But on the whole, users are now ready for and aggressive about investment. If I talk to upper management at any company about the IoT, every customer wants what we call digital transformation. It’s not “all-in” investment, but it’s aggressive at every company.

**IoT DG:** *Advantech obviously provides hardware infrastructure, but the emergence of WISE-PaaS and SRPs address a much broader portion of the solution stack. What is your vision for Advantech moving forward, and how could this redistribute value in traditional electronics supply chains?*

**LIU:** WISE-PaaS is a general-purpose PaaS. Any industrial IoT solutions can work with it. It’s also transparent to IaaS platforms like AWS, IBM, Microsoft, and the Alibaba Cloud in China.

People use WISE-PaaS to collect data from sensors, transmit it to a database, create management dashboards, and implement control functionality. WISE-PaaS gives them everything they need to create this infrastructure and makes it very easy. Usually a customer can build out all of this functionality in three months.

But customers in every industry still need domain-focused, specialized SRPs to complete their system. When they need to do AI, for example, their system requirements will be much more involved because the AI will need to process data ingested by platforms like WISE-PaaS and make decisions. Right now, SRPs for AI are in high demand but not yet mature. This also requires domain-focused SIs, and is one reason we think this sector has high growth potential.

Our customers, the domain-focused SIs, need to provide integration and customization on-site for their customers. So far, I haven’t seen any SIs grow into large organizations. Of course, big companies like Siemens, Schneider, and Rockwell will jump into the SI business for big projects, but most SIs are still small organizations. So while Advantech and certain SRP providers can be globally operated, most SIs need to focus on a single market in specific regions because they cannot be too far away from their customers.

Our model for WISE-PaaS is a cost-center model, not a profit center. We want to make WISE-PaaS popular at a low cost. Our profit model is to sell hardware. Maybe it’s a little strange, but we think a popular software platform and reasonably-priced hardware will be a healthy business for Advantech. Our competitors – like PTC, GE Predix, and Siemens – may have more revenue potential today, but they are leveraging a high-priced model. So while their offerings may be good for very big companies, for medium-sized and general customers I feel that our model is a better fit. It’s more “everybody’s” solution.

I expect the real winners from all of this to be domain-focused SIs that are fully, 100-percent, domain-focused. For example, an SI focused on intelligent hospitals will partner with us and adopt a model to become a cloud service provider that works

with one, two, or ten hospitals. The SI needs to be domain-focused because they need to grow to a stage where their domain cloud service becomes powerful. They must also be able to go deeper into the domain to provide things like AI and analytics functions for all of a hospital's departments.

Over time, their core competency will become these cloud-based services that can grow to help hospitals in different regions and potentially all over the world. By that time they will have grown into a large, successful company with popular solutions. You can already see this happening today through cloud-based companies like Uber and Airbnb.

But they need a platform provider like Advantech to provide the underlying hardware and software platforms. We want to use WISE-PaaS and SRPs to enable domain-focused SIs, and those SIs will add on domain-focused value. Although we have our own domain-focused product groups within Advantech, our position will be to remain a general-purpose platform provider. Because we address verticals like factory automation, transportation, medical, and retail, our coverage is too broad for us to be competitive in a specific domain.

**IoT DG:** *Last fall, the Advantech IoT Co-Creation Summit brought together hundreds of current and potential technology partners. What did the event teach you about the needs of IoT ecosystems, and what is your strategy for continuing to seed the IoT market to foster growth?*

**LIU:** At the Suzhou event we had a big announcement about IoT Co-Creation, which is our strategy to help domain-focused SIs better serve their customers using WISE-PaaS and SRPs. But at that time, many of the solutions were rather proof-of-concepts.

That was about four months ago, and our activity has changed from demonstrations and proof-of-concepts to solid SRPs and solid, collaborative relationships with domain-focused SIs. Most of the functions are becoming mature. The evidence of this is that last year we won about six new VIP customers per month. After the event up to today we're averaging about 10. So the growth is significant.

We've also initiated other activities to help educate our partners and the market that the industrial IoT is a good investment venture. For instance, instead of doing one big IoT Co-Creation Summit event like last year, this year we will be doing 60 smaller events of about 100 attendees for our partners worldwide. So far, every one of these IoT Co-Creation Partner Conferences has been a full house.

But we also have a long-term strategy based on minor investments in those SIs. We're currently invested in several companies in Asia. We are 20 percent shareholders, and help them with their platform development, global marketing, and succeeding as domain-focused integrators. We are enabling them, but if they become successful we will share in that success.

**“The SI needs to be domain-focused because they need to grow to a stage where their domain cloud service becomes powerful. They must also be able to go deeper into the domain to provide things like AI and analytics functions ... ”**

Now, SIs have decided to jump into the arena, and of course there are a large number of startups. I recently attended a venture capital event and almost every one of them has shifted their focus to industrial IoT and AI.

Momentum is accelerating, and I think this year or next year will tip the scales for IoT.

For more information on the IoT Co-Creation Partner Conference, visit: [iotsummit.advantech.com/en-us/ccpc](http://iotsummit.advantech.com/en-us/ccpc)

For more information on WISE-PaaS, visit: [wise-paas.advantech.com/en-us](http://wise-paas.advantech.com/en-us)

For more information on Solution-Ready Platforms, visit: [www.advantech.com/products/webaccess-software-solutions/sub\\_5d88a401-7766-439c-868e-bc4128e5b079](http://www.advantech.com/products/webaccess-software-solutions/sub_5d88a401-7766-439c-868e-bc4128e5b079)

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*K.C. Liu founded Advantech in 1983 and has been the chairman ever since. His passion and leadership have inspired the company to stay focused on its core competencies, and have led ultimately to achieve its status as the leading light in the worldwide industrial computing arena. K.C. Liu, an avid reader, often purchases good management books to share with all of the management team. Periodically, the company holds book-club meetings in its branch offices around the world. Especially high on his list of favorites are “Built to Last,” “Good to Great,” and “Blue Ocean Strategy,” which he says have had a major impact on the way business is done at Advantech.*