IoT83

Board-Level Strategy for Industrial Smart Systems & IIoT Mega-Trends

Industry Guide

Table of Contents

Table of Contents

Board-Level Strategy for Industrial Smart Systems & IIoT Mega-Trends

In the current industrial marketplace, marked by continuous innovation and dynamic shifts, industrial OEMs are facing an unprecedented opportunity – and challenge – for long term differentiation. With enterprise customer demand for the economic advantages of Internet of Things (IoT) and Smart Product solutions now at full maturity, the Original Equipment Manufacturers (OEMs) that achieve strategic differentiation with such solutions can lock-in a long-term competitive advantage.

This whitepaper delves into the transformative power of IoT adoption for OEMs, exploring how it shapes their competitive edge.

Lee House, Founder and CEO at IoT83, lends his visionary insights to this exploration. With a track record of recognizing technology trends and delivering game-changing enterprise solutions, Lee provides OEMs with a pragmatic guide as to the importance of this IoT mega-trend and the alternatives available to OEMs move ahead of their competition.

Lee's leadership spans GM and VP positions at GE, IBM, 3Com, and various Silicon Valley companies, backed by an MSEE and MBA from Duke University. Lee's role as a thought leader in the IoT domain positions him to guide OEMs into a future where connectivity and innovation redefine the industrial landscape.

Lee House

Founder & CEO at IoT83

IIoT and AI Convergence will Change the Industrial World

A recent article in Forbes (by Anis Ussaman) emphasizes that industrial automation and innovation investments will rapidly increase in 2024 driven by the convergence of IIoT, Edge Computing, AI, and new communications advances. Predictive maintenance, smart shop floors, real-time monitoring, demand forecasting, automated inventory control – and many more powerful advantages – are transforming how work gets done and driving new levels of efficiency. We can already see this moving quickly in virtually every vertical market.

Today, this convergence of AI, Industrial IoT, and big-data analytics, is rapidly gaining momentum as OEMs and Enterprises are learning how to harness and integrate these technologies. And with this increased familiarity new cycles of innovation with ever increasing value are accelerating to transform the industrial products landscape. Given this high-impact rate change across industrial markets, it is becoming more and more difficult to hypothesize the long-term business impacts this mega-trend have.

But one thing is clear for Board Members and CXOs in industrial sectors: the convergence of these technologies has the potential to make or break the future prospects of your businesses. Businesses that have the foresight to play their cards right can leap-frog their competitors and possibly even create entirely new business categories for themselves. On the other hand, it is not dramatic to suggest that businesses that fail to embrace these transitions could be crushed.

This article will focus, as well as we can now predict, on the different options industrial segment Board-Level and CXO leadership must "get this right".

The IIoT and AI Hype Curve is Over

Most forward-looking leaders are well aware of these mega-trends, and already feel competitive pressures to embrace the productivity, efficiency, and broad cost saving benefits that IIoT and AI will bring. Customer demand is now pressing OEMs and industrial solution providers to accelerate delivery of Smart Products, Applications, and Enterprise-wide IIoT solutions. And once OEMs and their customers establish their "foundational layer" in Smart Solutions and operational practices, expansion of IIoT and AI applications will continue to accelerate, and this juggernaut will only build in velocity.

What this all means from a Board-Level / CXO strategy perspective includes the following:

- First, keeping pace with these changes is essential. Without doing so a business can find that it is simply be too late to catch up later. In this scenario the business would already be facing downward market valuation, price pressure, and revenue declines, and at the same time be trying

to pay the technical debt to catch up.

- Second, we should expect that the criteria for how industrial enterprises evaluate, validate, and ultimately purchase industrial products may change dramatically through the course of this IIoT / AI integration evolution. For example, buying behaviors will almost certainly switch from a feature-first perspective to a productivity-first / operational simplicity / service-value-first perspective.

- And, given the underlying complexity of IIoT and AI technology, from managing big-data systems, security, connectivity, and reliability, to building AI and ML analytics models and integrated smart systems, it will be essential for many companies to dramatically re-think staffing skills, consider targeted acquisitions, or to establish strategic long-term partnerships to fill this gap.

All of this will certainly impact how any industrial business entity is valued by customers and by the market itself. So, maintaining a strategic roadmap to embrace this sweeping sea change is essential.

Getting On Board – Building an IIoT / AI Foundation

"Table Stakes" and the key first step for industrial OEMs and Enterprises is to build Smart Edge capabilities into their product lines. This is because operational device, asset, and process data is at the heart of this entire revolution. Without the IIoT edge data itself, there is nothing further for big-data processing, analytics, or AI to operate on.

Building out Smart Edge capabilities can take many forms, depending on the nature of the products in the business portfolio. For example, for high Capex assets this could include adding sensors to monitor key elements of the asset, aggregating this sensor data in a central hardened computing element, and then providing secure standards-based protocol connectivity to that Smart Edge data. For businesses that deliver multiple products as a part of an industrial solution, telemetry data from each device will need to be gathered and aggregated into a Smart Edge hub, or the like, again, with upstream connectivity to this aggregated Smart Edge data (See our Product Owner Lite Paper for more details on implementing the Smart Edge). Again, this is "Table Stakes" and essential.

The next step on the IIoT value creation ladder is to aggregate Smart Edge elements and the IIoT data they provide into Smart Applications. Smart Applications are the intelligence that makes sense of this Smart Edge data to deliver the Remote Monitoring, Asset Management, Predictive Maintenance, and other Smart Services that customers ultimately expect from IIoT solutions. The emphasis, functions, and customer value delivered by Smart Applications can vary significantly depending on the processes, operations, and context where these applications are used. For example, applications for manufacturing processes will emphasize equipment uptime and operational flow, with end-user focus on operators, logistics, and shop-floor owners. An application focused on fleet management may

focus on overall asset health, location, route optimization, and operator behaviors, with its end-user focus on fleet dispatch operators and flee P&L optimization. And, many applications will have multiple operational contexts as well as multiple end-user roles and needs.
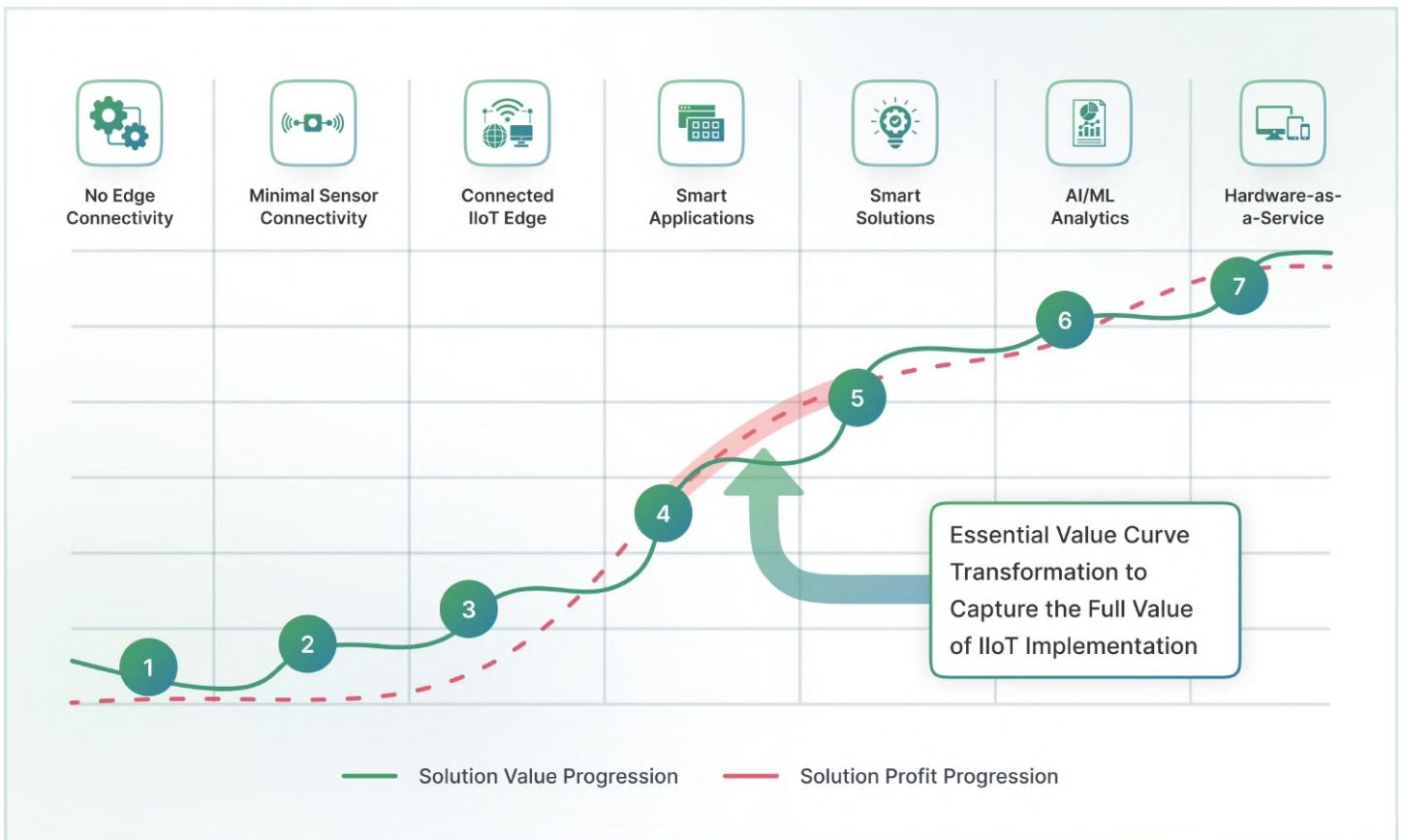
The importance to OEMs of integrating Smart Edge data into Smart Applications or Solutions cannot be overemphasized. For OEMs that deliver Smart Edge products, but don't provide Smart Applications or Solutions, it is a hard fact that they will only receive a fraction of the total revenue from the aggregated solution. In such cases, the "downstream" Smart Solution provider will get the largest portion of the revenue that the OEM's Smart Edge investment enabled. This also adds longer-term risk as the OEM's products can become replaceable components in a broader solution owned by another business with arguably greater account control.

In some cases, a Smart Application may be the "top tier" of an IIoT solution. But in many cases, Smart Applications that handle a specific set of assets and given context will need to be integrated into Enterprise-wide "Smart Solutions" that operate on a wider context than a single Application will provide. Such Smart Solutions will aggregate insights from multiple Smart Applications to build a bigger picture of Enterprise-wide processes, operations, logistics, and services. Smart Services that bring together multiple Smart Applications can add higher-level analytics and intelligence to deliver dramatically more value than the underlying Smart Applications alone, simply because they bring together the big picture, operate on more data, and leverage the insights and intelligence of the underlying applications. Still, for OEMs and Operators, this should be an iterative process of first establishing their IIoT foundation first with Smart Edge and initial IIoT Applications, and then layering on more value over time with Smart Applications enhancement and expansion, and then by building broader Smart Solutions that interact with and use the foundational Smart Applications.

The diagram below provides an important map to understand an OEM's value chain in moving up the hierarchy from Smart Edge to Smart Applications and Solutions, and beyond.

Of course, all industrial businesses will have their own nuance in terms of the best path to implement Smart Edge, Applications and Solutions. But all industrial OEMs should analyze how the shifts towards Smart Product, Solutions, and Services will impact their particular businesses with a "wide angle lens" because new competition may come from unexpected places. For example, an OEM with top-tier products could soon see strong competition from a tier-2 OEM products that are better integrated into Smart Applications, Systems or Services.

The important message here is that it is essential to establish your business's IIoT strategy now and to set it in motion, as this IIoT and AI convergence mega-trend already upon us.

Icons row: No Edge Connectivity · Minimal Sensor Connectivity · Connected IIoT Edge · Smart Applications · Smart Solutions · AI/ML Analytics · Hardware-as-a-Service

Essential Value Curve Transformation to Capture the Full Value of IIoT Implementation

— Solution Value Progression   — Solution Profit Progression

The IIoT and AI Convergence will Disrupt Industrial Go-To-Market Models

The historical model of Capex / hardware-centric purchasing of industrial equipment is expected to see interesting headwinds as the IIoT and AI convergence continues.

First, as can be seen from the IIoT "Value Curves" diagram above, as this mega-trend advances, industrial products not equipped with Smart Edge capabilities are expected to decline significantly in value relative to competitive products that include these capabilities.

Second, once industrial OEMs have established their foundational IIoT systems and are delivering real IIoT customer value, they will begin to derive new recurring revenue via Software-as-a-Service (SaaS) software licensing for this new value add. And given the value these services will deliver, customers will willingly pay for these new levels of efficiency. As such, the total revenue blend for industrial OEMS will shift from pure hardware sales to a mix of hardware and software licensing sales. This shift is likely to prove very interesting as some OEMs may be willing to discount their hardware sales significantly and place a very heavy emphasis on the value they provide via recurring software services. This could prove tricky for competitors to navigate, particularly if their own software services are not competitively aligned.

Over time we should also expect the revenue mix to shift further towards software services as OEMs continue to enhance these services. For example, by integrating IIoT solutions with MRP systems new logistics management revenues can be generated. With the addition of highly effective AI algorithms to enable Predictive Maintenance, aggressive new service level agreements (SLAs) and uptime guarantees can be sold. By implementing support for competitive products, an OEM can go beyond any strict alignment with their own hardware sales revenues and begin to earn SaaS service revenue that incorporates their competitor's products, and at the same time, marginalizing their competitor's value.

Finally, as these software services reach full maturity, we also expect to see Hardware-as-a-Service (HaaS) gain more traction in industrial OEM markets. With HaaS offerings, customers move completely away from the CapEx model of purchasing assets, and move to an OpEx only model, paying for the hardware, and associated services, on a monthly, or per use, basis. It is important to note that the emergence of this new business model is only possible if the asset provided is supported by high levels of instrumentation and powerful analytics to allow this business model to succeed. Without such a deep understanding of asset longevity and servicing, this model could become a financial disaster. However, where successfully implemented, the benefits to customers are huge, including always having up-to-date assets, assurance of continued asset uptime, deterministic OpEx models with OEM-based service guarantees, and more. We already see these HaaS offerings from John Deere, Caterpillar, BMW, Phillips, and others. And, as OEMs move beyond the foundational stages of IIoT and AI, to more mature stages, we expect to see many more of these "disruptive" offerings.

With this imminent evolution in the industrial world where revenues are moving away from one-time hardware sales to a mix of hardware and recurring software revenues, it is essential for Board and CXO level leaders to keep clear tabs on how competitors are approaching this evolution in their product and service pricing – and how customers are responding!

Strategic Imperatives and Strategic Positioning

At the Board and CXO level, the first step in responding to this IIoT and AI convergence mega-trend is to assess how much your market is exposed this revolution demanding integration of hardware and services. For example, if your company manufactures ball bearings, concrete, or steel, your exposure may be much more limited that a company that builds complex assets for power & water, manufacturing, communications, or transportation. Still, IIoT and AI software services can drive efficiency in any OEM's manufacturing and operational efficiency, as well as in optimizing customer engagements.

But assuming you do see this IIoT and AI convergence as having a major impact on your sector, it is essential to establish a strategic plan for this IIoT and AI convergence. For most OEMs and Operators, such a strategic plan goes well beyond a product development or acquisition roadmap, and should also include in-depth competitive analysis, M&A evaluations (buying or selling), skillset transitions, as well as potential changes to company marketing and branding.

Impact on Business Valuations in the IIoT / AI Mega-Trend

As this IIoT / AI convergence advances in the industrial products sector, the valuation of industrial businesses will also swing sharply depending on the level of exposure the business has to this mega-trend (due to the nature of products offered) as well as the success the business has had in integrating these IIoT / AI capabilities into product lines and broader solution offerings.

For example, a tier-2 or 3 company that does a stellar job of building foundational IIoT, building powerful context-specific applications, and integrates these into Smart Solutions, could possibly double or triple their prior valuation based solely on prior hardware sales. More pointedly, such a business would then be an extremely attractive acquisition target for a larger business struggling with this transition.

Similarly, larger OEMs that also successfully implement IIoT / AI solutions across their product lines and offerings will quickly be seen as highly differentiated from other large OEMs that are without this lagging in this transition. It is expected that early investment in IIoT / AI convergence success will create a "virtuous cycle" of adding new value, enabling incremental re-investment and enhancements, that brings higher levels of customer engagement and account control, all resulting in growing market power. On the other hand, should such OEMs not successfully make this transition, competitive forces will likely have strong negative impact on on-going success and valuations.

Earlier we also discussed the strategic need to transform and enhance the skills needed to build, deliver, and maintain these new disruptive capabilities. And as many of these skills are not native to industrial OEMs, smaller businesses that are expert in implementation of these capabilities will also increase in value purely out of demand. Both large and small OEMs should keep this in mind as early IIoT / AI skills acquisitions will be far more accretive than later ones.

So, as a result of these dynamics, business valuations should be expected be highly IIoT / AI success oriented as this mega-trend progresses. To stay ahead of the curve in this transition, Board-level and CXO leaders should think carefully about the following:

- Establishing a coherent IIoT / AI strategy early & to set a solid foundation. Since productizing IIoT and AI technologies is complex and time consuming, playing catch-up later could be a distaster.

- Build your strategy for skills acquisition, whether organically, through M&A, or via partnerships. The depth of the skills needed will depend on the nature of your business.

- For larger OEMs, look seriously at M&A to accelerate your leadership early in this industrial transition to achieve the "virtuous cycle" discussed above.

- For all OEMs, understand that success in this industrial transition will almost guarantee a dramatic boost in the value of your business and competitive differentiation in the market.

- For smaller OEMs, understand that success in delivering winning solutions will not only yield more business success, but also very likely lead to highly lucrative M&A discussions.

- Closely examine your core competencies from an IIoT / AI / Big-Data perspective and evaluate strategic partnerships to fill in necessary gaps from both a skills and time to market perspective.

IIoT / AI Solutions Success is a Journey Not an Event

The sum of long-range market analytics and expectations show that this IIoT / AI convergence is a new fact of life for industrial OEMs and will transform how work gets done forever. As such, the technologies and solutions they enable will continue to evolve. This means that keeping pace, or better still leadership, with this intelligent solution evolution needs to become a core strategic focus and for the long-term.

Given what can be a very intimidating long-term endeavor to make this IIoT / AI enablement transition, in this guide we have emphasized "incrementalism" - where OEMs should build an initial IIoT foundation of Smart Products and Applications, and then build incrementally to add more layers of value. But it must be understood that in the industrial sphere even an initial foundation must meet enterprise-grade standards needed to support mission critical industrial operations. Without the enterprise-grade cyber security, scalability, and reliability that industrial customers need, IIoT solutions may do more harm than good, and certainly stand to harm the reputation of the supplier. Further, such a sub-standard foundation is in effect starting this journey with a heavy burden of "technical debt", where the early shortcuts taken product development prevent the product from meeting real market demands.

At IoT83, we also advise that OEMs use caution when considering the adoption of "Rapid Application Development" (RAD) platform that use only Low-Code and No-Code tools to build new applications. While it is true that such platforms can accelerate Proof of Concept (PoC), Minimal Viable Products (MVP), or even initial product offerings, these solutions often lead to gaps and shortfalls down the road in security, scalability, reliability, and particularly in solution flexibility emerge.

This results in, again, high technical debt, often discovered very late in the roll-out cycle. IoT83 also values and uses these technologies to increase the flexibility of applications built on our platform, but combines these technologies with more advanced "Pro-Code" core services, SDKs, APIs and streamlined processes to prevent these setbacks and roadblocks.

In the next sections we dive into the different IIoT and AI Platform strategic alternatives available to OEMs in their long-term strategic journey to make this transaction from a hardware asset world into the world of Smart Products, Applications, and Solutions. Obviously, at we IoT83 believe we have done the best job in the industry of understanding the challenges facing industrial OEMs and how to streamline their transition and long-term success in this new and evolving future. In summary, the IoT83 approach to provide OEMs with a rock-solid enterprise-grade starting point, to provide multiple the tools, templates, and workflows to accelerate PoCs and MVPs for early market validation, but also to provide working secure, scalable, reliable, and flexible core IIoT services libraries, SDKs, and APIs to do the heavy lifting for custom applications, along with working out-of-the-box IIoT solutions that contain all of the key industrial features and functionality an OEM needs in this transition for long-term success.

Building Your IIoT Implementation Strategy

This section of our guide provides an outline to successful implementation of IIoT and AI solutions for OEMs. To maintain full context and completeness, some earlier concepts are repeated due to their criticality in a successful IIoT / AI product development roadmap.

Strategic Consideration 1: Roadmap for Execution of Core IIoT Capabilities

Foundational to any IIoT business enablement is the creation of the Core IIoT Capabilities. And for many (if not most) OEMs, the skills needed to build these capabilities are somewhat foreign, so building out these core capabilities can be very expensive and time consuming. And, depending on an OEM's expertise in each technology area, different execution, technology, and ecosystem partnerships options may be critical to success. As such, we now examine strategic alternatives available to OEMs for their 1) Smart Edge Enablement, 2) Big-Data / Processing (the "Platform"); and 3) for Smart Application and Solution Creation.

The Smart Edge –

For more in-depth detail on Smart Edge implementation we suggest you reference our IIoT Product Owner's Guide paper, but at IoT83 we strongly recommend that OEMs maintain tight control over this

piece of the overall IIoT solution. As this IIoT layer is the foundational connectivity and data source to an OEM's products, this Smart Edge functionality is always a strategic asset. So, ownership and expertise here, whether through well managed partnerships or in-house development, is essential to enable innovation, manage costs, and accelerate time to market.

Big-Data / Processing, or "The Platform" –

For many OEMs this layer poses the biggest challenge due to the technical complexity of this multi-dimensional component, as well as the depth of specialty skills needed to implement a "Platform". The depth of features, from device connectivity and lifecycle management, to data transformations, to analytics, to database management, to alarming and notifications, to scheduling, to Identity Access Management, and more, the feature depth of an enterprise-grade platform is very extensive. And, from qualitative level all "Platform" features must meet stringent cyber security, reliability, scalability, and maintainability metrics or customers simply will not deploy the solution, period. As a result, building or buying a "Platform" is a critical strategic decision for OEMs:

- For OEMs that have extensive software development skills in-house, making the investment in an internally developed platform can make sense, but it must be understood that even with the right skills available, this is a major undertaking costing millions, with a schedule measured in years. Even for OEMs that elect to build their own solutions long-term, it may make sense to initially partner to allow earlier time-to-market solutions, as well as to avoid major setbacks that often occur in from-scratch internal development.

- OEMs can somewhat reduce the time, risk, and cost of building a custom OEM platform by leveraging Azure or AWS IoT-as-a-Service (IoTaaS) offerings. But it must be understood that IoTaaS offerings are made up of multiple scalable and reliable components, but these offerings are not already a working and enterprise-grade "Platform". The investment to build an Enterprise-Grade complete solution from these components remains very extensive, requires many specialty skills, and again, can take years to complete.

- While IIoT offerings are not in themselves already ready to use "Platforms", they do generally offer very solid device management and on-boarding solutions. As a result, we have seen some OEMs take a "hybrid approach" and use these IoTaaS elements for the "bottom layer" of their "Platform", and partner for the "Application Creation Platform Layer" to accelerate creation of rich customer facing applications. For example, they may use Azure's IoT Hub and Azure Device Update to collect data from the edge and to manage their devices, and then to use a strategic partner's IIoT Platform to accelerate the reliable creation Enterprise-Grade Smart Applications and Smart Services. It is worth noting here that any use of IoTaaS precludes any "on-premise" IIoT platform deployments as these services rely on the provider's cloud infrastructure for operation, and so,

they are "closed" systems.

- So, for many, if not most, OEMs, bypassing the time, cost, and risk of building the Platform by identifying a strategic partner to provide this layer is the most pragmatic path. Certainly, at IoT83 we are biased here, but industry data bears this out from a program success rate perspective. By following this path, the depth of specialty skills needed for success is far more manageable, to say nothing of minimizing development costs, time to market, and program risks. Taking this path with the right partner, the platform is already enterprise-grade and solid, so the focus is immediately on the applications and solutions. But taking this path, it is essential to identify a strategic partner that can reliably meet all of your long-term objectives for application and solution security, scalability, reliability, and flexibility, but also provide an engagement model work with your team to efficiently deliver exactly what your business needs.

Smart Applications and Services –

Only once the Smart Edge and Platform layers are in place can the actual Smart Applications and Services be built. Strategic considerations for building Smart Applications and Solutions include the following:

- For OEMs that decide to build their own IIoT Platforms, building the Applications and Solutions takes more or less the same direct software development path. And if care was taken to 1) manage separation of concerns in the platform architecture, 2) to provide for a simple mechanism to on-board Smart Edge data, and 3) to assure the cyber security, reliability, and scalability of the core platform, building the Applications and Solutions is a far easier task than building the Platform itself.

- For OEMs that choose to leverage a strategic partner for the Platform, a key selection criterion for their partner should be the efficiency, flexibility, and power of that partner's platform in the creation and differentiation of new OEM custom applications. The best modern IIoT Platforms provide 1) Very streamlined application creation tools such as well documented core platform services accessible via SDKs (to core service APIs) for rapid "Pro-Code" development, 2) Robust sample applications to use as "Catalyst" for new development (that include highly used IIoT "Design Patterns", as well as 3) Low-code / no-code workflows that can be used for rapid application creation and application enhancement. Another key consideration for many OEMs will be the "open" versus "closed" nature of the alternatives, where more open systems simplify integration with other tools and use industry standard programming languages. The best open and carefully constructed solutions also provide a clean dividing line between the platform and the OEM's application to preserve clear IP ownership and OEM value portability. Often it requires

extensive hands-on engagement with potential partners to understand the depth of their capabilities and to successfully choose the best partner. But assuming a modern partner has been chosen, building new customized and Enterprise-Grade Applications and Solutions is a straightforward process.

Strategic Consideration 2: First Applications and Iteration Management

Because of the underlying cost and time to market associated with the creation of the Core IIoT Capabilities (discussed above), the planning, and even execution where possible, should run in parallel to Platform enablement for the earliest possible commercially viable deliverables. Along these lines, at IoT83 we always advise our customers on three key considerations:

- Seek implementation paths where an OEM's financial investment maintains as close as possible a time horizon to when the OEM reasonably expect to see real product results and a start to a return on their investment. This objective can be a real challenge for OEMs that choose to build their own platforms, but where they leverage a modern IIoT Platform with appropriate Application Enablement and Creation tools and workflows, a tight window between initial program investments and commercially viable results is completely realistic and should be a tightly managed goal.

- The first Application created should serve as the OEM's IIoT foundation. For this application OEMs should identify a set of high value objectives with very clear strategic and commercial value but with a limited initial features and capabilities scope. This first application must still maintain enterprise-grade security, scalability, and reliability as discussed earlier. Following this approach contains expense and timelines and accelerates real results while minimizing technical debt. Then, with this application, the OEM's IIoT foundation is established. Then, iterative investments in new application features, new product integrations, new derivative applications, and analytics / AI value-add becomes far more streamlined and cost effective. And, once the OEM has gained a solid familiarity with the platform and application creation process, they will reach a new plateau of innovation to create more business and solution differentiation.

- Finally, while we emphasize that a focus on near-term results and an iterative approach is important, it is also essential to fully embrace long-term and strategic thinking. The key message here is to avoid short-cuts from both a Platform and Application creation perspective as this results in customer disappointment as well as the accumulation of technical debt that is hard to recover from. The bottom line here is that enterprises expect Enterprise-Grade security, reliability, and scalability. So, a solid foundation is key.

While it is not the purpose of this article to overly hype IoT83's platform, our entire platform design is driven to address these key objectives, as the Platform is enterprise-grade from the start, and the Application creation tools and workflows accelerate results.

Strategic Consideration 3: Continued Go-to-Market Evolution Planning

As discussed earlier, the convergence of IIoT and AI is driving a transformation in industrial markets that will morph traditional go-to-market strategies. So, once and OEM's IIoT foundation is established, OEMs the next strategic consideration to embrace are how these capabilities can be leveraged for maximum go-to-market advantage.

At a high level, once IIoT Smart Edge, Smart Applications, and Smart Solutions are in place, OEMs have multiple new options from a long-term go-to-market perspective, and almost certainly, OEMs will tune this strategy as they advance in the power and sophistication of their IIoT / AI solutions. As such, OEMs will be best suited to re-evaluate go-to-market approaches as they advance from early offerings, to more sophisticated solutions, to advanced and proven complete IIoT / AI offerings. Throughout this evolution, go-to-market alternatives will include:

Marginal Change:

Sell Industrial Products with an IIoT / AI Integration advantage built into the price. This essentially amounts to still selling "hardware", but with IIoT differentiation and the promise of more to come. Here, the OEM is providing the same portfolio as before, but with significantly higher added value and differentiation.

Software-as-a-Service Offerings:

As the depth of the OEM IIoT / AI offerings increases, the natural next step is to offer subscription based IIoT / AI solutions to customers. Here, the value of the solutions goes well beyond the "one time sale" value of hardware, and the OEM can realize ongoing revenues for subscription services. Key elements of these services can include:

- Remote Asset Monitoring – including operational optimization metrics such as thresholding, advanced rules, alarm & alert management, event notifications, and more.

- Predictive / Prescriptive Maintenance – Implement rules-based and AI/ML algorithms to both protect capital assets from catastrophic failure, and to optimize operational efficiency.

- Advanced Equipment Service Level Agreements – Post implementation of advanced Predictive / Prescriptive maintenance and sufficient visibility into equipment behavior, OEMs can offer new levels of guarantees regarding customer deployments. This is a distinct competitive advantage over competitors that cannot offer this.

- Add Competitor Equipment Connectivity – By integrating competitor equipment into the OEM's IIoT offerings, the OEM effectively commoditizes the competition and achieves far greater account control – while also providing the customer with far greater value.

Vertical Market Specific Applications:

Post establishing a solid IIoT solution, OEMs can use their vertical market expertise to build and productize vertical market solutions that do not directly depend on their hardware sales. At this point the OEM is beginning to truly expand the company value to include both hardware and software / IIoT / AI offerings, which can have a profound impact on valuations.

Hardware as a Service:

Moving a step beyond offering advanced Service Level Agreements, once the OEM has very solid data regarding asset performance, useful life, and equipment service costs, the OEM can begin to offer Hardware-as-a-Service. HaaS is expected to become far more commonplace in industrial markets to allow customers to 1) always have reliable equipment; 2) have SLAs governing the use of the equipment; and 3) only pay for equipment that they actually use. And, OEMs that have the IIoT, AI, and asset performance data to allow them to offer HaaS will have a highly competitive advantage over competitors.

Launch a Separate IIoT / AI Business (Spin-Off):

The Last go-to-market evolution discussed here is where the OEM has developed such a sophisticated and complete IIoT / AI solution that expanding this requires disassociation with the OEM business itself. At this point, the independent entity, now a highly competitive software company, has independent value, and by disassociation with the OEM has a larger TAM with expanded target customer opportunities.

Strategic Consideration 4: Plotting a Maximum Market Value Path

This topic has already been touched on earlier in the "Impact on Business Valuations in the IIoT / AI Mega-Trend" section. As highlighted there, an OEM's success with IIoT / AI implementations and adoptions are expected to create major new leverage in the market. It is expected that the appetite for IIoT / AI M&A activity will reflect this. As a result, to maximize maximum market value, Board and CXO leaders should consider the following:

1. Smaller OEMs, as well as product solution companies, that build out IIoT / AI capabilities quickly and effectively will become high-value acquisition targets for larger OEMs that need to bolster their transformations.

2. The Boards and CXOs of Tier-1 OEMs should be on constant alert for the opportunity to acquire smaller OEMs that fill competitive gaps in their portfolio, whether from a technology or product perspective.

3. Tier-2 OEM Boards and CXO leaders should have the same objectives, but with more affordable M&A targets.

4. At the same time, all industrial OEM Board and CXO leaders with successful IIoT / AI capabilities should recognize that they will also be potential M&A targets as this market evolves and the largest players seek to re-define themselves.

Another very powerful tool that OEMs can seek to leverage to maximize valuation is to "own" IIoT standards in their sector. Where an OEM can become the de facto standard in a specific area as this market evolves, they can derive significant new value. Historically, in every major technology shift, initially the "transformative concept" is king, and all competitors follow this concept – here IIoT and AI. But as the market evolves, the need for standardization to enable industry wide adoption, interworking, and the "mainstreaming" of the elements of the "transformative concept" becomes important, if not essential. In short, new standards will normalize and simplify implementations and interworking. So, any OEM that creates and successfully "owns" a de facto standard for Edge Data standardization, Device interconnection, Digital Twin modeling, AI model building for a specific category of industrial devices, using IIoT / AI for process optimization, or any such category, can build for themselves a huge valuation transformation. So, from a board or CXO leadership perspective, this is another important lever. How much you "own" of the way this industrial transformation evolves can be a huge impact of your differentiation and ultimately on your business valuation and future revenues.

Conclusions

Industrial Board and CXO leader already know that the convergence of IIoT and AI will revolutionize, and dramatically change their businesses. This change is already upon us, and the velocity of this change is accelerating.

This guide has provided insights as to the likely impacts this transformation will have on industrial business success from both a market power as well as valuation perspective, along with many of the key success factors that leaders should take into account as they build and enhance their strategic execution plans to optimize their success as this mega-trend evolves. The most important message from this guide is the urgency to act in the face of this inevitable sea change to the way work gets done. And, if you need a solid partner in this transformation, there is no better partner than IoT83.

IoT83 is wholly focused on OEM IIoT enablement, with a complete enterprise-grade platform, pre-built customizable applications, and extensive supporting application creation templates, tools, and workflows. Now with over 60M devices connected, we have extensive experience in working with OEM teams to jumpstart initial success, and to build long-term strategic success.

At IoT83, we know making strategic partner decisions requires extensive due diligence into a potential partner's products, reputation, and into the team itself. We love due-diligence exercises so we can show off the thought leading solutions that we provide and how our customer engagement model streamlines the long term success of our customers. If we can help, we want to hear from you.

Speak To Us

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To find more, visit: https://www.iot83.com/