How to Choose a Giving Your ERP Eyes & Ears with IoT – Part 1

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Current IoT-enabled ERP solutions aren't delivering business intelligence or driving growth; well, not as much as they could be anyway.

What's missing is more depth to the data, another layer of contextual information from the IoT layer that makes a huge difference to the actionable insights that an ERP can generate.

There are many benefits of deploying an ERP like SAP for data management in an enterprise, some of which include:

- Centralized data — giving stakeholders access to updated organization-wide information.
- Unified views — across multiple departments and information systems; no more subjective data/information or uniquely filtered views that leads to two figures for the same stat.
- Quicker, better business decisions — especially when stakeholders needn't waste time doing their own homework and verifying someone else's conclusions.

Quicker, better business decisions are vital in today's competitive environment, they give enterprises more agility and adaptability, allowing them to alter processes and effect change faster and more efficiently.

With effective data and enterprise-wide information management, businesses can also evolve faster, boosting process efficiency, reducing operating overheads, and aligning disparate divisions more easily.

That's only possible, however, if the data is:

1. Reliable — in its exactness, and timeliness.

2. Secured — and guarded against eavesdropping or tamper.

3. Integrated — and easy to access as well as consume across the enterprise.

While enterprises are toiling away at guaranteeing #2 and #3 for their ERPs, there's a glaring lack of focus on #1.

Without an established (and enforced) data sharing or management strategy in terms of frequency, enterprise ERPs usually grapple with unorganized data collection, gaps in reporting, and ultimately, bad decisions that stem from incomplete information or flawed insight.

Where ERPs Fall Short— Seamless Automated Real-time Data Collection

An ERP's strength is its ability to stitch together siloed data to generate operational analytics and actionable insight.

Unfortunately, several ERPs today still rely on manual or semi-automated data aggregation and collection processes, which makes plenty of room for error.

Manual data management can be prone to age-old human error. Besides the possibility of mistakes, the lead time that manual processes need to gather, sort, and feed data into business intelligence systems can also lead to gaps in visibility.

To really leverage the power of ERPs, the data they dwell on needs to be:

- **Consistent** — in its structure and depth
- **Reliable** — i.e. accurate and timely
- **Real-time** — to generate immediate benefits

While it's hard to build consistency in an evolving environment (businesses are phasing out obsolete processes and practices more than ever before to stay competitive) creating and running a consistent data management strategy (preferably one that's cloud-based) is vital to gathering vital data. That, in turn, guarantees the success of business outcomes based on data-driven decisions — all driven in turn by effective and intelligent ERP systems.

And that, ladies and gentlemen, is where the Internet of Things can help.

Why Are IoT Sensors the Eyes & Ears of an ERP?

While ERPs have their strengths in consolidating data, delivering information, and driving better decisions, they're still lacking in one critical aspect — driving enterprise connectivity and data gathering capabilities through touchless automated systems.

That's where the plethora of IoT sensor and monitoring solutions out there can help.

Low-cost portable connected devices deployed through the enterprise value chain can help automate erstwhile manual and human-capital intensive data gathering and aggregation activities like logging, inventory, audits, and general report/data assembly.

> IoT sensors and monitoring devices can plug the real-time data gap for ERPs

What's more, the cloud-connected nature of these devices means the data gathered is more current, eliminating the otherwise significant information lag prevalent older ERP implementations; no more waiting for an email attachment at odd hours of the night.

ERPs can leverage IoT devices for a simple but powerful advantage — omnipresent awareness — especially for things like shipments or movable assets that are outside the confines of your enterprise's walls. ERPs in the age of IoT don't have to rely on human enablement (for data reads or feeds) to deliver operational improvement, they now have their own eyes and ears.

While plenty of IoT-enabled solutions exist that can bridge the gap between an enterprise ERP and the data it needs, there are still a few operational snags to deal with.

Collecting and organizing data into easy to consume constructs requires data to be pulled from new-age devices at remote sites and different enterprise levels to an existing ERP framework for analysis.

And therein lays an ERP's biggest hurdle to embracing the IoT for self-enablement.

While IoT-enabled monitoring and tracking devices can help bridge the real-time data gap for ERPs, some enterprises have trouble bridging the generation gap between new-age sensors and old-school enterprise software.

Why Today's IoT Isn't Really ERP-ready

Although most IoT enterprise ERP solutions have APIs that help connect data from the field to an ERP's cloud deployment, the direct integration isn't always as seamless as you'd like it to be.

Part of the problem is that the data gathered may not always be relevant, up to date, or properly validated. Besides that, another major flaw in current systems is the IoT "integration" usually stops at stitching together one-dimensional data streams with an ERP database. While hooking up an ERP with more real-world data is useful, it'll take more to really enable the ERP to deliver actionable insight.

Take, for example, an IoT-enabled GPS location and condition tracker that's used to monitor frozen food shipments.

The IoT device feeds current coordinates and temperature data into an ERP like SAP, which allows an enterprise to keep an eye on temperature sensitive shipments that are out for delivery.

To anyone manning the enterprise dashboard, all they'd be able to see is a dot on the map, and maybe a color-coded temperature readout that indicates the shipment's health.

What's missing there, however, is additional insight derived from contextually relevant data.

It'd be very useful to have additional information like:

- ETA — which will depend on traffic conditions and the number of stops to make along the way.
- Condition status — which in tandem with ETA, can tell whether the final delivery will make it in one piece.
- Damaged on-board inventory — which could help trigger safety stock dispatches before an inopportune stockout happens.

Most IoT solution APIs stop short of delivering these additional nuggets of information, settling instead for reporting a simple bit of data accurately and periodically.

It's then up to the ERP (and some back-end cloud computing wizardry) to crunch the other contextually relevant numbers to throw up additional insights. While that's doable, it adds more layers (and probably more lag) to the IoT-ERP intelligence integration.

Anyone with some experience in the space will tell you, adding extra layers to your integration will also increase the odds of something breaking down or malfunctioning — which could lead to bad decisions based on bad data.

The Right Approach to Merging IoT-driven Insights with ERP

What's needed is a more cognizant IoT system for ERP enablement, something that can share the load and cut to the chase.

Instead of delivering the raw data that an ERP needs to make sense of itself, a better, more ERP-enhancing IoT system ought to crunch the data itself and deliver more filtered information that an enterprise intelligence system can make better use of.

In our next blog, we'll talk about how to do just that as we examine how to integrate IoT-enabled data-driven intelligence with SAP Leonardo.

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