

# Smart Factory Software

## REQUIREMENTS AND FEATURES CHECKLIST

Selecting the right **IIoT Smart Factory** software comes down to knowing your specific operational challenges, finding a vendor that matches your business culture, and knowing your requirements around your machine and IT connectivity. To make the search process easier, we have created this comprehensive checklist that breakdown various requirements and features you should consider and prioritize before, during and after your software search. Use the below template to coordinate teams, get decision makers on board with digital transformation, and find the best solution for your operations.

### Phase I: Before speaking with vendors/prioritizing requirements

Before speaking with vendors, it's important to evaluate your organization's readiness for a new software solution. Proceed through the following steps in order to gather all the necessary information and fully evaluate your options.

OBJECTIVES	PRIORITY (N/A, Low, Med, High)	DESCRIPTION/NOTES
<b>Vendor Selection Search Team</b>		<p>Defining your requirements begins by assembling a vendor selection team whose responsibilities lie in appropriately selecting the right software application. It's important to select individuals from your organization who have expertise and understanding in the area of the business that the software application will support.</p> <p>Be sure to involve key stakeholders such as executive members and decision-makers. Other members to consider include:</p> <ul style="list-style-type: none"> <li>· Operations managers</li> <li>· Finance managers</li> <li>· IT, Maintenance/Engineering</li> </ul> <p>Notes:</p>
<b>Key Business Requirements:</b>  Cost reduction  Quality improvement  Improve customer satisfaction  Improve productivity  Increase capacity		<p>Key business requirements are measurable changes that must be achieved in order to solve the problems currently facing the organization. Think about why the organization is undertaking the project and what are the benefits to the company or customers? Rank the requirements by Low, Medium and High to prioritize needs.</p> <p>Notes:</p>

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<p><b>Prioritize Functionality:</b></p> <ul style="list-style-type: none"> <li>Lean manufacturing</li> <li>Scheduling</li> <li>Collection of production data</li> <li>Production performance analysis</li> <li>Out-of-the-box</li> <li>Operator engagement &amp; visual mgmt</li> <li>Automation</li> <li>Continuous improvement</li> <li>Quality control</li> </ul>		<p>One of the first mandates of the vendor selection team is to review the high-level features needed for the software system from the original business case and to produce a set of requirements by gathering additional information from stakeholders.</p> <p>It is important to prioritize functional requirements to ensure that all stakeholders are on the same page about the key features that should be on the “needs” list and which items can be placed on a “nice-to-have” list.</p> <p>Notes:</p>
<p><b>Technology Requirements:</b></p> <ul style="list-style-type: none"> <li>In line learning tools</li> <li>Remote screen management</li> <li>Universal machine connectivity—networked or physical i/o</li> <li>Integration with other enterprise solutions such as erp</li> <li>Hosted/On-Premises</li> <li>Mobile-Friendly</li> <li>What type of hardware is required</li> </ul>		<p>Not all manufacturing operations have the same technical requirements and have different needs when it comes to the type of software that will work for the way their infrastructure is set up. It is important to be aware of your specific IT connectivity requirements.</p> <p>Work with your engineering &amp; IT team to determine what types of technology requirements are required - for example, how is the new software solution going to connect to machines on the plant floor? Networked PLC’s or Sensors?</p> <p>Also be careful not to connect data points that are not going to solve a specific business problem. Maintain a focused scope not to create a long and costly implementation.</p> <p>Notes:</p>

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<p><b>Budget</b> (Based on how many assets and plants)</p>		<p>The cost of smart factory software will depend on several different factors including the number of users, cloud vs. on-premise implementation, advanced feature requirements, training, and more, so it's important to establish a range in the budget rather than one solid number to go by.</p> <p>Notes:</p>
<p><b>Support and Services:</b></p> <ul style="list-style-type: none"> <li>On-site Maintenance</li> <li>Implementation Services</li> <li>User Support</li> <li>Training</li> <li>Maintenance Contracts</li> </ul>		<p>Support can sometimes be the deciding factor when it comes to choosing between vendors. Some vendors may provide 24-hour support and international support in multiple languages where others may not. However, businesses with 24-hour support often outsource this process, decreasing personalization. Weigh the pros and cons of personalized support vs 24-hour support.</p> <p>Services are also important to determine if the vendor is suitable for your needs. Prioritize the key important support and service requirements that are needed for the software to be successful in the organization.</p> <p>Notes:</p>
<p><b>Implementation Timeframe:</b></p> <ul style="list-style-type: none"> <li>3-6 weeks</li> <li>3 months</li> <li>6 months</li> </ul>		<p>Set a realistic timeframe for when the software needs to be up and running but be sure to create time to go through the sales process with the vendors. Most implementations take between 3 to 6 weeks dependent on the number of plants.</p> <p>Notes:</p>

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### Phase II: Evaluating product and vendors

When evaluating vendors and products, it's important to keep the list short by narrowing down your top 5. Use the below checklist to rate each vendor out of 10 for each of the categories.

FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
		VENDOR A	VENDOR B	VENDOR C	VENDOR D	SHOPLOGIX
<b>Visual Dashboard</b>	Visualize real-time data using dashboards on the production floor that provide quick looks into how jobs are performing (OEE metrics, counts). Provide insights into opportunities to improve machine performance and process inefficiencies					
<b>Machine Performance</b>	Collect data in real-time from each machine control and operator					
<b>Downtime Recording</b>	Record and categorize/act on downtime as it's happening. This information to be made available in real-time to managers in downtime pareto charts.					
<b>Slow Running</b>	Proactively engages the team by identifying slow cycles (OEE Performance loss), small stops (OEE Performance loss), and poor quality (OEE Quality loss) while running.					
<b>Micro Stops</b>	Ability to automatically detect minor stoppage losses that occur when a machine stops for a short time as a result of a temporary problem. Ability to set minimum production speeds.					
<b>Real-time Production Monitoring</b>	Automatically monitor, report and analyze machine states and track real-time production to establish more efficient processes and reduce downtime.					
<b>Continuous Improvement</b>	Develop a CI Culture to foster sustainability through training, education and data-driven decisions.					
<b>Scheduling</b>	Optimize job scheduling and understand the impact of real-time schedule changes on resources, production and on-time delivery.					
<b>Quality</b>	Automatically monitor and control processes and procedures to produce more quality product with less waste and rework.					

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FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
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<b>Loss Analytics</b>	System should address the "seven wastes" namely, overproduction, waiting, transporting, inappropriate processing, unnecessary inventory, unnecessary or excess motion and defects					
<b>Set up Auto Conditions</b>	Ability to create thresholds with alerts to monitor various conditions such as temperature, pressure, level and flow.					
<b>Labour Tracking</b>	Automatically track and analyze labour efficiency to optimize your workforce on all your customer orders.					
<b>Break Creep</b>	Track the amount of time exceeded when employees return from scheduled breaks/time it takes to start the machine up.					
<b>Late Start/Early Start</b>	Automatically monitor, report and analyze machine states and track real-time production to establish more efficient processes and reduce downtime.					
<b>Process Tracking</b>	Monitor key process parameters in real-time and get notified when something goes out of tolerance.					

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FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
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<b>Material Flow</b>	Efficiently plan, control and manage the flow of materials from component parts to finished goods.					
<b>Lot Tracking/ Inventory Receiving</b>	Lot tracking, or batch tracking, helps your operations to track batches throughout the whole door-to-door process, from receiving a raw material to its shipment, in real time.					
<b>Out-of-the-box</b>	Features are ready to use right away with minimal customization and required.					
<b>Automated Data Collection</b>	Eliminate manual processes to get reliable machine data and accurate production counts.					

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TECHNICAL REQUIREMENTS						
FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
		VENDOR A	VENDOR B	VENDOR C	VENDOR D	SHOPLOGIX
<b>Ease of Integration With Other Systems Such as an ERP</b>	Determine which systems that your operations will keep such as ERP software that the smart factory platform will have to integrate with. How easily can this new system be connected to other operating systems and how does the data flow work?					
<b>API</b>	Essentially, an API dictates how software components should interact and allows two separate systems built on different operating systems to communicate and share information with one another. In the world of Smart Factory software, an API connection is frequently used when you want the system to communicate with other operating software such as ERP systems.					
<b>Scalability</b>	The ability to scale across global operations.. As you add more product lines and plants, you need to scale the systems you use to manage an increase in volume/additional machines. Find a solution that allows you to add more features/plants as needed and does not restrict your business by setting a limit on number of machines/users.					
<b>Hosted/On-premises</b>	There are many differences between our on-premises and hosted/cloud software including up-front costs, hardware requirements, and pricing structures. Make sure you know the requirements of both options (i.e., strong internet connection) before making a decision.					
<b>User Guides</b>	Step-by-step in-line instructions on how to use screens and troubleshoot errors.					
<b>Operator HMI</b>	Provides operators an interactive, visual representation of the status of a control system with real-time data acquisition.					

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DEMO EVALUATION						
FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
		VENDOR A	VENDOR B	VENDOR C	VENDOR D	SHOPLOGIX
<b>System Overview</b>	How user-friendly and intuitive is the system? Can employees easily adopt and engage with it on a daily basis?					
<b>Personalization</b>	What types of reports are important to your operations and how does the system automate this data? Are there any out-of-the-box reports?					
<b>Screens</b>	How accessible are the different screens. Does the flow of screens make sense? Can you access the menu and toolbars from specific screens?					

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VENDOR EVALUATION						
FUNCTIONALITY REQUIREMENT	DESCRIPTION/NOTES	VENDOR NAMES				
		VENDOR A	VENDOR B	VENDOR C	VENDOR D	SHOPLOGIX
<b>Financial Stability</b>	How long has the vendor been around? Ask about their financial standing to ensure that you will have long-term access to the system and support.					
<b>Number of new releases/year</b>	Is the vendor stagnant or active in their developments? How often do they release new features and upgrades?					
<b>Sales Process</b>	Evaluating the vendor's sales process is important to know how they ensure good fit. Do they take the time to understand your operations and customize their presentations to meet your needs? How long is the sales process?					
<b>Customer Base</b>	Be sure to read any case studies and do your research on the types of customers of the vendor. Are they similar in industry and size?					
<b>Customer Reviews/References</b>	One of the best ways to get an accurate picture of how a vendor treats its customers after making the sale is by speaking with current customers. Try to speak with multiple references in your industry or those who have similar business processes, and perform background research on the vendor's implementation history.					
<b>Implementation Timeframe</b>	What does the implementation include? Do you receive user training and consulting?					
<b>Implementation Services</b>	What does the implementation include? Do you receive user training and consulting?					
<b>Implementation Timeframe</b>	Support is an important item to address and your requirements will vary depending on how your operations are run. A few questions to consider are if the vendor support is in-house or overseas? Is it during business hours or 24/7? Can you email support? How big is the team?					
<b>SLA/ Maintenance Contracts</b>	What is included in the Service Level Agreement and is there fine print you should be cautious about? Does it cover bug fixes and upgrades? How much does it cost for extra support hours?					
<b>TOTAL</b>						

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### Phase III: Making the decision

TOP 3 VENDORS (List your top vendors below)		
VENDOR A	VENDOR B	SHOPLOGIX
<b>EVALUATE AFFORDABILITY</b> (ROI Estimator)		
<p>When considering investing in a software solution, one of the most important factors that organizations tend to consider is the length of time to achieve ROI and profitability. Use the below ROI calculators to get a better idea of the potential software investment's impact on operations. Enter the estimated yearly investment per vendor, the number of scheduled weekly hours, burden rate/hour, number of machines in your facility and target improvement percentage per vendor in the appropriate fields to see the estimated monthly savings and pay back time in months.</p>		
Estimated investment/year:  Scheduled weekly hours:  Burden rate/ hour:  Number of Machines:  Target improvement:  Estimated Savings /month:  Pay Back Time in months:	Estimated investment:  Scheduled weekly hours:  Burden rate/ hour:  Number of Machines:  Target improvement:  Estimated Savings /month:  Pay Back Time in months:	Estimated investment:  Scheduled weekly hours:  Burden rate/ hour:  Number of Machines:  Target improvement:  Estimated Savings /month:  Pay Back Time in months:
<b>EVALUATE COMPANY CULTURE</b> (Is it similar to yours? Can you work with the people?)		
<p>As much as company culture is important to your business, it should also manifest in your supplier. Values such as speed, quality, excellence, innovation, and reliability are existent in trustworthy companies and you want to be sure that the same can be said about the vendor.</p>		