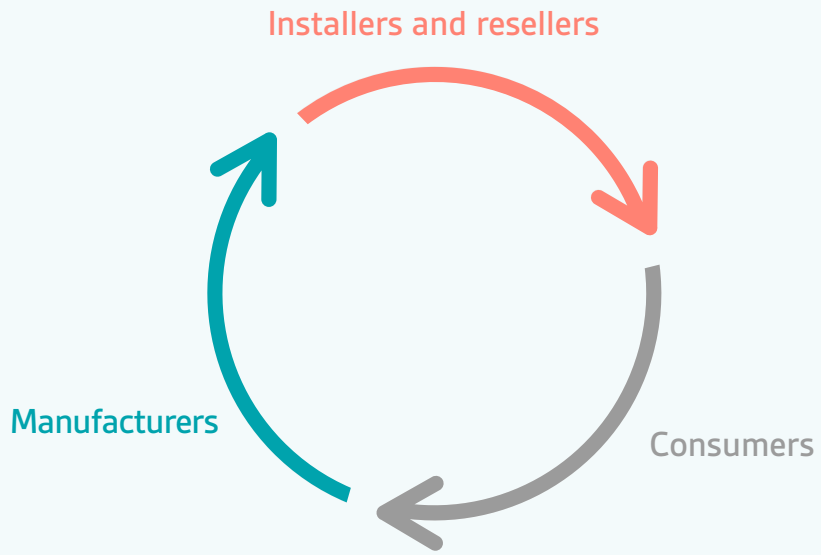
IoT and OT Ecosystem – Top Tips

The following 'top tips' will help each of the stakeholder groups understand what high-level activities will have the biggest impact to the overall secure implementation of OT and IoT devices.



For Manufacturers

Define your support model up front
To avoid getting into complex negotiations around support models, it is useful to define the exact activities you perform, your response times, and any other things that you provide in a standardized way. Cloud computing gives us a good model for this, particularly when looking at the larger providers.

It may be advantageous to have tiered support models, with differing levels of involvement.

Define the lifecycle
Define how long software will be supported for, and what the model is for upgrading or decommissioning. Similarly, define the expected lifetime of the hardware and any firmware, and what should happen at the end of its lifetime.

Monitor and test for vulnerabilities
Have clear communication path for external researchers to report issues and allow for responsible disclosure practices. Additionally, ensure you have a thorough testing regime which looks at negative testing (i.e. ensuring the device doesn't do things it shouldn't) and security testing to identify vulnerabilities.

Use Secure by Design and Default principles
Ensure security is embedded in your software development processes, to have the best chance of delivering a secure product. When deploying the devices, ensure the default settings are the most secure, for example;

- No default passwords, and force password changes on first login
- Disable insecure protocols
- Enable encryption as default where possible

For Installers and resellers

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Develop architectural patterns for secure installation
To provide the most efficient installation procedures for each individual client, work with a security architect to develop standard deployment architectures which deliver security and resilience. These can be re-used across a range of clients with similar needs, allowing you to reduce the time needed for design and likelihood that risks could be introduced through deployment.

The patterns should include options for a range of resilience, backup and monitoring solutions that can be integrated into the overall installation.

For Consumers

Understand your responsibilities
Identify whether you have any legal responsibilities, for example if the devices collect personal data, and address these through technical and procedural controls.

Identify and manage risks
Understand how you use the solutions, and the associated risks. Where a risk is above your risk appetite, ensure that there are additional controls or mitigations to address this. If that is not possible, ensure your detection system would identify the risk if it is realized.

Understand and monitor the support model
If you are being supported by the Installer or Manufacturer, ensure you understand what support model is being paid for and check that it is being provided as expected. Identify where any provided support model does not address any of your responsibilities or risks and understand how you will close that gap.

Clearly define how your internal IT teams will work to support the connected OT (if at all) and where the lines of responsibility and escalation lie.

Use an asset register
Create an asset register which allows you to know what devices you have, their functions and data, where they physically are, and who has access to them. Assign a senior stakeholder to have overall accountability for the devices and any associated obligations and risks.

Monitor for 'Shadow OT'
Identify any areas where unauthorized OT devices may be introduced. Have clear and strong guidance on how new technologies are approved and formally introduced to your network, with training and education for staff.

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