OAV Maturity Model

Use our Orchestration, Automation and Virtualisation (OAV) Maturity Model to position yourself on your OAV journey

Get a quick look at your OAV progress in four main areas and subsections

Previous research on the status of OAV in the European NREN community has shown significant differences among institutions in scope. The differences can be observed at the level of user groups and use cases, implementation approaches, levels, tools, systems, processes … either in the area of orchestration, automation or virtualisation. Such differences made it hard, if not impossible to compare different organisations and institutions. Thus, defining a maturity model that can be used regardless of an institution type imposed itself as a natural solution.

The first step when defining the maturity model was to explore existing maturity models and their fit into the community and all dimensions that needed to be explored, to conclude that existing models do not present a suitable fit. Therefore, a new model is developed. The dimensions in scope are: Architecture & Technology, Processes & Services, Vision & Strategy, and People & Organisation, each of them considering six possible stages marked from the lowest to the most advanced stage as none, crawl, walk, run, fly, and energise.

To get a quick look at your own OAV progress complete our OAV Maturity Model Assessment Survey.

- Infoshares ++ Research
- Infoshare: Maturity Model for Orchestration, Automation and Virtualisation, Oct. 21, 2022
- all WP6 events
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<th>Stages of the OAV Maturity Model</th>
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<td><strong>None (sit)</strong> - Organisations in this stage have either not implemented OAV in their production networks, or only minimal virtualisation has been implemented. The organisation architecture is traditional with siloed tools, manual processes and CLI-based management. Vendor-compatible bundled solutions are used for advanced management. There may be some sporadic interest in using some of the OAV technologies, but they are isolated and are only used for personal or testing purposes. The employees and other relevant stakeholders may be starting to express interest in employing OAV technologies and related training activities.</td>
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<td><strong>Ad Hoc (crawl)</strong> - OAV has gained traction and there is interest among engineers and development teams. There are some individuals or small teams that are starting to apply OAV in their production procedures - trying to make their daily activities easier and less error-prone. OAV capabilities of tools and suites are starting to be analysed. Scripts are developed to automate steps in production processes. Policies and procedures are starting to change to incorporate the OAV aspects. Selected department members are investigating technologies such as data analytics and AI and are gaining initial hands-on experience. Initial experimental virtual components are put into production.</td>
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<td><strong>Use Case/project-based – reactive (walk)</strong> - OAV is now part of the strategic decisions of upper management and the initial pilot use cases (on a service or process level) are being implemented in production. Several cross-departmental teams are being formed around the chosen projects and in-depth investigation and integration of management components is underway. The goal is automation of chosen processes by using (and if required, developing) compatible APIs and related data models. A virtual infrastructure is being set up in the production environment and virtual services are available for use. This leads to a gradual change in the organisational architecture - moving from a traditional closed/siloed approach to one using OAV functional components. The overall organisation attitude towards OAV is starting to change and trust in OAV technologies is rising. AI-based approaches and related advanced techniques are being sporadically used.</td>
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<td><strong>Use Case/project-based – proactive (run)</strong> - OAV is now part of the strategic decisions of upper management and the initial pilot use cases (on a service or process level) are being implemented in production. Several cross-departmental teams are being formed around the chosen projects and in-depth investigation and integration of management components is underway. The goal is automation of chosen processes by using (and if required, developing) compatible APIs and related data models. A virtual infrastructure is being set up in the production environment and virtual services are available for use. This leads to a gradual change in the organisational architecture - moving from a traditional closed/siloed approach to one using OAV functional components. The overall organisation attitude towards OAV is starting to change and trust in OAV technologies is rising. AI-based approaches and related advanced techniques are being sporadically used.</td>
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<td><strong>Dimensions of the OAV Maturity Model</strong></td>
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For each dimension additional subdimensions are defined and the Maturity Model lists further subdimensions and an explanation of each of the stages.

- Components integration in an OAV architecture
- Application Programming Interfaces (APIs)
- Compatibility
- Virtualisation
- Security
- Data modelling / Object abstractions
- Analytics
- Artificial Intelligence (AI)
- Data

- Automation of processes
- Service design (service specification)
- Service lifecycle management (provisioning / change / termination)
- Monitoring and reporting
- Troubleshooting (incident and problem management)
- Security management
Why use an OAV Maturity Model?

Maturity models are streamlined depictions of an organisation's capacity for continuous improvement in a specific discipline. In other words, the model evaluates how well a company or system is able to improve itself from a given state, allowing you to observe a company's maturity level in terms of either the quality or use of the discipline's resources.

The justification for implementing our own maturity model is that, after conducting extensive research on existing maturity models, we were unable to identify one that was suitable for Orchestration, Automation and Virtualisation. We desired a maturity model that NRENS could use to assess their OAV-related status. In addition, maturity models evaluate qualitative data when specific dimensions and stages are established. In the case of OAV, we desired to establish the dimensions as *Architecture & Technology*, *Processes & Services*, *Vision & Strategy*, and *People & Organisation*, and the stages as *none*, *crawl*, *walk*, *run*, *fly*, and *energise*. Because NRENS can illustrate the status of each dimension with ease. Thus, the realisation of a new model of maturity was unidirectional.