ASERVO Software

ASERVO DevOps Maturity Model

Navigating Your Transition Journey

Management Summary

DevOps has arrived in the enterprise. Started as a set of principles and best practices, DevOps has become a mainstream approach fundamentally changing the way of working in modern ITorganizations.Nevertheless, the way towards a DevOps IT iscumbersome and quite a few success stories sound like a lucky punch. Today there are some well-known patterns that help organizations to navigate their way through the whitewater. What is so special about DevOps? It's not what you might think.Most of it is common sense. But DevOps implicitly turns the culture of traditional IT groups upside down and enforces a fundamental organizational change by shifting responsibilities.The ASERVO DevOps Maturity model is a structural approach helping organizations to identify their position duringthe journey to DevOps IT, and define the next tactical and strategic steps in the transformation process.

The ASERVO DevOps Maturity Model

The existing maturity models focuses either on certain aspects that mark a DevOps IT organization, or they focus on the 4-5 DevOps pillars (CAMS, CALMS).

The ASERVO DevOps Maturity Model combines all in oneholistic view by assessing the skill set in 8 dimensions (see box on the right).All active stakeholders get included in the assessment process to identify the real status of DevOps by uncovering lurking ice bergs. The model converts theresults of interviews conducted into a weighted assessment. This will reflectthe importance of the dimensions. For example, organizational topics will hamper oraccelerate the transformation process a lot more than shortcomings in the toolchain – and they are a lot harder to fix.

The result will then be used for twoactivities – definitionof the overall maturity and planning of tactical and strategic areas for improvement that will help most to progress.

We use a simple, 5-level model to describematurity:

1 – Traditional IT
2 – Transition Started
3 – Transition in Motion
4 – Transition Advanced
5 – DevOps IT

The idea

Organizations are assessed and ranked within 8 **dimensions**:

- Organization
- Process
- Governance
- Architecture
- Quality Management
- Tooling
- Infrastructure
- Metrics

The assessment results will show which of the **5 levels of maturity**are already achieved:

1 Traditional IT
2 Transition Started
3 Transition in Motion
4 Transition Advanced
5 DevOps IT

Why 8 dimensions?

Many organizations look at DevOps from a limited perspective. Automation seems to overrule everything, and the right tooling isoften rankedas more important than the organizational changes. Focussing on the 4 - 5 pillars of DevOps pushes the attention a lot towards downstream aspects of DevOps and neglecting upstream at the same time.

Organization
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One of the key aspects of DevOps isto take down the traditional barrier between your development groups and the IT organization. Establishing teams being responsible for DevOps, and with that opening another silo, can be a killer for DevOps from the very beginning. But what if your IT is located on the other end of the city? Can developers and administrators still collaborate in cross-functional teams? Or does the reporting line prohibit this? Do and can they share the necessary information? Is collaboration possible? But the bigger topic is more often the wall in people's minds. The aspect touches all pillars of DevOps, and the effort for transforming the barriers is high.

Process
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From a high-level point of viewthere are threeimportant questions to be answered. Is there a process defined at all, isthe process documented, and is the process lived by the team? Although Agile is one of the fundamental drivers of DevOps it doesn't mean an absence of process and rules. Particularly in industries with a high demand for compliance, processes and their implementation are key fora successful DevOps initiative. An important criterion for mature organisations living DevOps isthe right amount of lightweight but enforced processes.

Governance
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Governance seems to be a natural enemy of DevOps, but it is not. Most industries face high internal or external compliance regulations when dealing with software development. One of the big concerns of C-level executives is the perceived openness (and forthat vulnerability) of the production systems. Within this dimension we look after the ability to balance the needs for governance vs. the necessity for new, more and faster releases neither slowing down unnecessarily nor open up extreme risks.

Architecture
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The architecture of the software has a direct impact on the ability to automate the delivery. Although it has not been in the focus of DevOps in the beginning, experience shows that most of the timethe architecture of a software stack is causing significant problems toa successful DevOps transformation. The more monolithic and the more dependencies you have, the more CD (Continuous Delivery) turns into CR (Continuous Refactoring).The

architectural dimension analyses the grade of modern architectural principals to allow the usage of modern, highly flexible deployment capability.

Quality Management
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We have broken out quality management as a separate dimension to reflect the rising importance of quality control. The more development organizations mature, the more they ship code, but often forget to adjust the quality management processes. Historically QA is seen as a separate discipline and only loosely coupled with engineering. However highly successful transformations have shown that DevOps demands a left-shift of quality related activities into the early stages of development. This can happen either by TDD (Test-Driven-Development) or continuous validations on components that are used but not developed by a project. The dimension covers the level of test automation as well as additional fostering and supporting actions to ensure that quality turns into a responsibility for everyone.

Tooling
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A tool will never fix an organizational problem, but thewrong tool is getting in the way and can become an impediment. Every tool has been developed and designed with a typical usage model in mind. Legacy systems often reflect the reality of software development in the last millennium. If your way of developing software hasn't changed until then, they will still fit with their capabilities, but they struggle to unleash the power of modern approaches with highly distributed teams, being virtual just for a certain period. The more 'siloed' the toolchain, the harder to break down the walls between the different stakeholder groups.

Infrastructure
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Key to a successful DevOps initiative isthe elasticity within the infrastructure. Traditional data center set-ups with bare metal servers, manually wired and installed cannot cope with the rising need to dynamically wind up and down complete deployment stacks. The more advanced an organization is in applyingcloud technology (publicor private or both), and the more virtualized, the better IT and end users can deploy new features all the way up to production.

Metrics
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The dimension of metrics istwo-folded. It gives an insight in the capability of an organization to provide metrics at all, and make the success or failure of change visible. But more important than how metrics are published and disclosed within the organization it gives a great insightabout the openness of a structure and its approach how to deal with feedback – in the positive as well and in the negative way. If metrics are hidden within an exclusive circle of stakeholders it is hard for an organization to demand openness and trust between the different stakeholders.

What are characteristics for the 5 maturity levels?

As mentioned earlier we decided to use a model with 5 discrete steps. This does not mean that an organization ranked on level one fails in all aspects. The model uses specific thresholds that organizations have to achieve to move to higher levels. To use an extreme example: ACME Corp. has made high investments in new cloud technology and virtualization. Every request for a new server has to be routed by the developers via a helpdesk tool, the typical turnaround time is twoweeks. Would you rank them on their way to DevOps? As a rule of thumb, we rank cultural aspects higher than technological aspects, or in other words – if organizations fail in changing the company culture they will not improve towards DevOps.

Level 1 – Traditional

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Organizations in this level show all signs of being stuck around the turn of the millennium. The architecture of the software stack is lacking modern principles, the infrastructure is still based on bare metal hardware or virtualized, but fully controlled by traditional IT processes. The toolchain is aged as well, implementing governance aspects that inhibit an acceleration of the deployment rate. The organization is setup in a traditional way with clearly defined handover points of responsibility and different tools 'siloing'data. The teams do collaborate only in a limited way via tools, but rather formally (usually meetings, calls, email etc.).

Level 2 – Transition Started

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Organizations that have advanced to this level have started their journey either by addressing the most cumbersome organizational barriers, or have successfully executed lighthouse projects, gathering data that can be used to continue with a deeper penetration of DevOps principles and technologies.However, the process has still not gathered enough momentum and isoften dependent on one or a few key players driving the initiative.

Level 3 – Transition in Progress

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In the next level organizations have shown that they are able to adjust the organization by breaking down barriers and collaborate. They have also addressed (or started) initiatives to modernize the architecture of the software stack, and improve on the tooling side. The key metrics are enabled and used for continuous feedback about the progress and further improvements.And finally, they can show the ability to repeat success by having done it more than one time in the same way.

Level 4 – Transition Advanced
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By moving to this level, organizations are crossing an important border line. The transformation process has gained enough momentum within all stakeholders that it is irreversible. The teams and different roles have experienced enough success with DevOps to continue the journey. Another aspect of this level is the increasing improvement and reuse of achieved improvements. It shows a growing level of standardization in all dimensions, and users are looking into improvements by themselves.

Level 5 – DevOps IT
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Organizations that have achieved this level can act as a DevOps IT organization. Cross-functional teams collaborate on all aspects of development and deployment, real time metrics and continuous feedback are available. The groups themselves proactively look for reuse and extended automation. Governance is a natural part of the development and deployment activities. The IT organization is able to provide a hybrid, elastic infrastructure in a secure manner.

How long will it take to assess and transform?

There is good and bad news. Let's start with the bad news first. There is no formula to allow a precise prediction on the duration of the transition process. The vast majority of changes have to happen within the culture. Now for the good news – the assessment and the outcome will show you exactly where you are and give the necessary guidance with tactical improvements to achieve quick wins, as well as the long-term strategic initiatives with clear recommendations and timelines. The assessment will take 3-5 days, depending on the size of the organization, so you will get all you need to start your journey to DevOps IT within twocalendar weeks.

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