A practical guide towards becoming a High Performance Organization

“FUNCTIONALLY SLICING THE TRANSITION”

Questions? Join @ Slido.com with #devops2019
A bit about me

Michiel Sens
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Email: msens@xebia.com

Job (current):
- Solution Architect & Principal DevOps Consultant @ Xebia
- DASA “DevOps Fundamentals” co-author and master trainer
- DevOps Trainer @ Xebia

Main area of expertise
- Continuous Delivery, DevOps and Automation (the whole spectrum)

Previous
- In IT industry as of 1996, background in Java Development since 1999
- In 2004 move towards architecture
- Managing Consultant / People Manager @ IBM

Key working areas:
- Assessments, value stream analysis, hands-on-delivery, architecture, conferences, presales and the whole shebang
"DevOps is the union of people, process and products to enable continuous delivery of value to our end users"
While a lot of products have been developed in the automation space....
You’d typically like to strike a balance between other topics as well ...

To really benefit, we need the ‘right’ mix of:

- Culture
- Organization
- Architecture
- Processes
- Automation
- Measurements

Often, the focus is only on this!!
Technology provides the customer with alternatives

Lifespan of S&P 500 companies has decreased from 67 to 15 years

Half of the existing S&P 500 companies have disappeared in the last 20 years

Year (each data point represents a rolling 7-year average of average lifespan)

Data: Innosight/ Richard N. Foster/ Standard & Poor's

SILICON VALLEY INNOVATION CENTER

The average lifespan of an S&P 500 company has decreased from 67 years in the 1920s to just 15 years today. Of the 74 or so companies that have stayed in the S&P 500 for more than 40 years.
Who will be the next Kodak in your area of operation?

- Many companies are ‘trapped’ inside their own success ...... the horizon 1 dilemma

Source: https://www.adformatie.nl/design/wie-wordt-de-kodak-jouw-branche
In essence, each Product follows the Three horizons model.

- **Horizon 1**: Operators extend the core
- **Horizon 2**: Business builders develop new opportunities
- **Horizon 3**: Visionaries create viable options

1. **EXPERIMENT**
2. **GROW**
3. **OPERATE**

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It’s no longer just about the product, it’s about the garden of products ...

To be responsive to continuous change, we need our garden to facilitate speed in delivery – in this is where DevOps comes into play.

Source: https://www.adformatie.nl/design/wie-wordt-de-kodak-jouw-branche

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What we need to achieve
Topics to address

- Culture
- Organization
- Architecture
- Processes
- Automation
- Measurements
A high performance culture

‘Quality first’

‘Taking responsibility’

‘Continuous Improvement’

2.0

3.0

‘Experimentation & risk taking’

‘Trust’

‘....’

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A product based organization

Business Value Organization Products (i.e. monitoring)

Software Run Products (i.e. IaaS)  
End user Product

Software Delivery Products (i.e. pipeline)

End-user Product “B”  
Product Team

Monitoring Product Team

End-user Product “A”  
Product Team

End-user Product “C”  
Product Team

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An architecture driving team autonomy

Infrastructure application(s)

End-user application(s)

“Optimized Integrations”

“Self-service, automated fulfillment”

Infrastructure application(s)

End-user application(s)

End-user application(s)
Processes which support speed of delivery

Do the **right** things!

Do the things **right**!
Every manual step automated

Automated (delivery of) IDE  Automated delivery process  Automated infrastructure

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Everything **measured** for effectiveness

- Employee Satisfaction
- DevOps Maturity
- Deploy frequency
- Lead time for changes
- Change Failure Rates
- Mean Time to Recover
- Actual Value ($$$)
- Customer satisfaction (NPS, ...)

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Transformation

SO ... HOW TO GET THERE?
Do not treat this as a ‘change program’
Do not transform in isolation

Transformation 1 **value**: “new scope of work!” “new culture!”

Transformation 2 **value**: “new processes!” “new architecture!”

Transformation 3 **value**: “new systems!” “new platform!”

Separated organizations -> This drives **local** KPIs

Organization with shared objectives -> This drives **end-2-end** KPIs

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### Starting point: (ambitious) KPIs

<table>
<thead>
<tr>
<th>Category</th>
<th>What to measure</th>
<th>High Performer</th>
<th>Low Performer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed</strong> (SW to Ops)</td>
<td>Deployment frequency</td>
<td>“On demand”</td>
<td>1/wk. – 1/month</td>
</tr>
<tr>
<td></td>
<td>Lead time for changes</td>
<td>Less than an hour</td>
<td>1 month – 6 months</td>
</tr>
<tr>
<td><strong>Stability</strong> (when live)</td>
<td>Mean time to Repair (MTTR)</td>
<td>Less than an hour</td>
<td>1 week – 1 month</td>
</tr>
<tr>
<td></td>
<td>Change failure rate</td>
<td>Between 0% and 15%</td>
<td>± 60%</td>
</tr>
</tbody>
</table>

* DORA, DevOps Research and Assessment “state of DevOps” report: [https://devops-research.com/](https://devops-research.com/)

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Target – end 2 end responsible teams

Business teams with core goal to support the customer

Platform teams with core goal to support the product teams

Business Domain A

- "Blueprint teams 1 & 2"
- "Team Run"
- "Team Delivery"
- "Team Monitoring"

Product teams

End user Product Team A
End user Product Team B
End user Product Team C
End user Product Team D
End user Product Team E
End user Product Team F
End user Product Team X

Support

APIs  Self Service  Metering

Software ‘Run’ Products
Delivering, maintaining and operating one or more operational environments.

Automation  Monitoring  Traceability  security  logging

Software ‘Delivery’ Products
Delivering, maintaining and operating one or more CI/CD Pipelines for delivery of SW

Software ‘Monitoring’ Products
Delivering, maintaining and operating products related to monitoring and product usage.

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Where each Product Team ...

☑ Is End to End responsible,

☑ Is cross-functional in nature

☑ Operates value driven (mission command),

☑ Strives for autonomy,

☑ Focusses on automation, everything as code!

☑ Applies measurements to improve product and process
Start small and functionally slice the transition....

Delivering end-2-end ‘value’ as we ‘slice’ along

Satisfy acceptance criteria!!

Synchronicity!!

Prep phase

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

Optional:

Strategic track
Building a ‘blueprint’ and transforming towards end-2-end product team situation

Tactical track
Prepare teams for eventual move in to strategic track

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Steer by objectives - mission command

**Current situation**

0. **Prep Phase objectives**
   - Imroving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI's

1. **Blueprint team 1 objectives**
2. **Blueprint team 2 objectives**
3. **Product team 3 objectives**
4. **Product team 4 objectives**
5. **Product team 5 objectives**

**To be situation**

5. **Product team 8 objectives**
6. **Product team 9 objectives**
7. **Product team 7 objectives**
8. **Product team x objectives**

"Decide where the information is"

**Strategic track**

Building a ‘blueprint’ and transforming towards end-2-end product team situation

**Tactical track**

Prepare teams for eventual move in to strategic track

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Steer by objectives - mission command

Current situation

To be situation

Prep Phase objectives

Blueprint Team 1 objectives

Blueprint Team 2 objectives

Blueprint Team 3 objectives

Blueprint Team 4 objectives

Blueprint Team 5 objectives

Blueprint Team 6 objectives

Blueprint Team 7 objectives

Blueprint Team 8 objectives

Blueprint Team 9 objectives

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

Typical Objectives prep phase

“Safeguard Funding”

“Get commitment from all involved”

“Establish boundaries for teams” (i.e. event storming)

“Set up communications”

....

Tactical track

Prepare teams for eventual move in to strategic track

Building a ‘blueprint’ and transforming towards end-2-end product team situation

Strategic track

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Steer by objectives - mission command

**Current situation**

0 | 1 | 2
---|---|---
**Definiton of Done** | **Definiton of Done**

**Prep Phase objectives**

- Blueprint team 1 objectives
- Blueprint team 2 objectives
- Team Run objectives
- Team Delivery objectives
- Team Monitoring objectives

**Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s**

**Typical objectives (product teams 1 & 2)**

- “Establish flow with business”
- “Utilize products of Run, Delivery & Monitor teams...

**Strategic track**

- Building a ‘blueprint’ and transforming towards end-2-end product team situation

**Tactical track**

- Prepare teams for eventual move into strategic track

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Steer by objectives - mission command

Current situation

To be situation

0 1 2 3 4 5 x

Definition of Done
Definition of Done
Definition of Done
Definition of Done
Definition of Done

Typical objectives (Platform team “Run”)

“Establish flow with Blueprint teams”
“Productize IaaS (initiate)”
“Blueprint 1 & 2 use first version of IaaS”
...

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

Prep Phase objectives

Blueprint team 1 objectives
Product team 1 objectives
Team Run objectives
Team Delivery objectives
Team Monitoring objectives

Blueprint team 2 objectives
Product team 2 objectives

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### Current situation

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<th>Prep Phase objectives</th>
<th>To be situation</th>
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</tr>
</tbody>
</table>

### Typical objectives (Platform team “Delivery”)

- “Establish flow with Blueprint teams”
- “Productize CDaaS (initiate)”
- “Blueprint 1 & 2 use first version of CDaaS”

### Tactical track

- Prepare teams for eventual move into strategic track

**Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s**
Steer by objectives - mission command

Current situation

0
Definition of Done

1

Definition of Done

2

Definition of Done

3

Definition of Done

4

Definition of Done

5

Definition of Done

x

To be situation

Prep Phase objectives

- Blueprint team 1 objectives
- Blueprint team 2 objectives

Team Run objectives

Team Delivery objectives

Team Monitoring objectives

Product team 1 objectives

Product team 2 objectives

Product team 3 objectives

Product team 4 objectives

Product team 5 objectives

Product team 6 objectives

Product team 7 objectives

Product team 8 objectives

Product team 9 objectives

Typical objectives (Platform team “Monitoring”)

“Establish flow with Blueprint teams”

“Productize MaaS (initiate)”

“Blueprint 1 & 2 use first version of MaaS”

...
Talking about "pulling the pain forward"

### Current situation

**Prep Phase objectives**

- Blueprint team 1 objectives
- Blueprint team 2 objectives
- Team Run objectives
- Team Delivery objectives
- Team Monitoring objectives

**Definition of Done**

- Definition of Done
- Definition of Done
- Definition of Done
- Definition of Done

### To be situation

**Objectives**

- Product team 3 objectives
- Product team 4 objectives
- Team Run objectives
- Team Delivery objectives
- Team Monitoring objectives

**Definition of Done**

- Definition of Done
- Definition of Done
- Definition of Done
- Definition of Done

### Strategic track

Building a ‘blueprint’ and transforming towards end-to-end product team situation

### Tactical track

Prepare teams for eventual move in to strategic track

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Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI's.
Prep Phase profiles

Blueprint team 1 profiles
Blueprint team 2 profiles
Team Run profiles
Team Delivery profiles
Team Monitoring profiles

Product team 3 profiles
Product team 4 profiles
Team Run profiles
Team Delivery profiles
Team Monitoring profiles

Teams decide which profiles are needed!!

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

Current situation

Defination of Done

Prep Phase profiles

Blueprint team 1 profiles
Blueprint team 2 profiles
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Teams decide which profiles are needed!!

To be situation

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Strategic track
Building a ‘blueprint’ and transforming towards end-to-end product team situation

Tactical track
Prepare teams for eventual move in to strategic track

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Team profiles

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

(Example) Profiles (teams 1 & 2)
- Product Owner
- 2x Dev Engineer “NodeJS”
- 3x Dev Engineer “Java”
- 1x Dev Engineer "ESB"
- 1x Test Engineer

Scrum Master=rotating role

Current situation

Prep Phase profiles

Blueprint team 1 profiles
Blueprint team 2 profiles
Team Run profiles
Team Delivery profiles
Team Monitoring profiles

Product team 1 profiles
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Building a ‘blueprint’ and transforming towards end-to-end product team situation

Tactical track
Prepare teams for eventual move in to strategic track

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Prep Phase profiles

Current situation

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Definition of Done

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Blueprint team 1 profiles
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Team Run profiles
Team Delivery profiles
Team Monitoring profiles

Product team 1 profiles
Product team 2 profiles

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI's

(Example) Profiles (team Run)

- Product Owner
- 3x Ops Engineer "Ansible"
- 2x Ops Engineer "Linux"
- 1x Ops Engineer "K8S"
- 1x Test Engineer

Scrum Master=rotating role

Strategic track
Building a 'blueprint' and transforming towards end-to-end product team situation

Tactical track
Prepare teams for eventual move in to strategic track

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Team profiles

Current situation

0 1 2
Definition of Definition of
Done Done

Prep Phase profiles

Blueprint team 1 profiles
Blueprint team 2 profiles

Product team profiles

Team Run profiles
Team Delivery profiles
Team Monitoring profiles

(Example) Profiles (team Delivery)
- Product Owner
- 2x Ops Engineer “Ansibe”
- 1x Ops Engineer “Jenkins”
- 1x Ops Engineer "K8S"
- 2x Test Engineer “....”

Scrum Master=rotating role

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s

Tactical track
Prepare teams for eventual move in to strategic track

Building a ‘blueprint’ and transforming towards end-2-end product team situation

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Team profiles

(Example) Profiles (team Monitoring)
- Product Owner
- 2x Ops Engineer “Ansibe”
- 2x Ops Engineer “ELK”
- 2x Engineer "AppDynamics"
- 1x Test Engineer “....”

Scrum Master=rotating role

Improving the current software delivery process by providing support to the teams and working towards a clear set of technical KPI’s
In the process, each product team aims to establish “the right” team dynamics

DASA Principle 1: Customer-centric action (Courage to act, innovate)
DASA Principle 2: Create with the end in mind (Product & Service thinking, Engineering mindset, Collaborate)
DASA Principle 3: End-to-End Responsibility (Live your accountability, concept to grave, performance support)
DASA Principle 4: Cross-functional autonomous teams (T-shaped profiles, complementary skills)
DASA Principle 5: Continuous Improvement (if it hurts do it more often, experiment fail fast)
DASA Principle 6: Automate everything you can (Enhance quality, maximize flow)

Source, DASA. For more information on DASA: https://www.devopsagileskills.org/
Now what I like about the approach...

Approach from multiple angles
(process, culture, Organization, architecture, automation, measuring)

Low risk, by starting small
(ALLOWING THE ORGANIZATION TO LEARN)
And as always ... there are pitfalls as well!!

A lot to absorb for one team
(process, culture, Organization, architecture, automation, measuring)

Uncertainty for teams not part of first batches
(teams not part of first batch might feel left out)

Initial teams might grow large
(as initially we need to work with T-profiles, not yet being T-Profiles)

Investment in team & process will slow down “regular” product development
(changing way of working, investing in process will slow down regular product development for team)

A certain level of seniority required
(As a starting point seniority in teams is required to induce and spark a new way of working)

Collaboration as of day 1
(blueprint teams 1 & 2 + Platform teams might not be Used to working alongside one another)
A final thought

The aim for DevOps is about establishing a “garden” in which products can come and go at a healthy and controllable pace...

For this garden we need technology, but also the people and attitude that respects and treats the soil of this garden as a first class citizen as well.

Questions? Join @ Slido.com with #devops2019

Thank you!
Michiel Sens
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