Developer Productivity Teams: Unleashing Potential for Better, Faster, Stronger Results

Ana Petkovska
Engineering Manager, Nexthink
How to create a developer productivity team with high productivity?
Developer Productivity (DP) teams

**Different names**
- Developer Productivity (Gradle, Apple)
- Developer Experience (Snyk)
- Engineering Productivity (Google, GitLab)
- Productivity Engineering (Netflix)
- DevInfra (Meta, Airbnb)

**Same mission**
- Enhanced developer efficiency
- Improved developer experience
- Faster feedback cycles
- Increased value for customers
- Based on data-driven initiatives
Developer Productivity teams

DevOps team

Platform team

DP team

Structure
Ownership
Work prioritisation
Communication
Decrease cognitive load
Develop self-service platforms
Focus on quality
Harness the power of metrics
Strengthen collaboration with the dev teams

*Based on our experience and industry practices
• 44 feature teams
• 250+ engineers
• 12 engineers in the DevEx group
• On-premise & Cloud product
Key achievements

- **2022 Apr**: Engineering Productivity team is formed

- **2023 Jan**:
  - **Improved deployment of microservices**
    - 7x faster deployments in production
    - 10x increase in continuous deployments within internal integration environments
    - 80% adoption of the new CD pipeline

- **2023 Jan**:
  - **Improved CI/CD system**
    - Improved scalability and reliability
    - 40% reduction in open support tickets
    - 95% adoption of Jenkins-as-Code

- **Sep**: **Improved repository management system**
  - Embedded governance and security
  - Autonomous management of repository settings
  - Moved to a cloud-based solution
Decrease cognitive load
Decrease cognitive load

- One of the three core dimensions for increasing DevEx
- Cognitive load can be improved by limiting the number of types of domains per team
- We can decrease the cognitive load by decreasing the ownership of a team

Three core dimensions of Developer Experience

Our DevOps team
January 2019

Repository management system
Artifacts management system
CI/CD tools
Release management & engineering

Base VM for the on-premise product

Product Delivery
DevOps-related topics
Our DevOps team
January 2022

Access rights management
Repository management system
Kubernetes lifecycle
Istio lifecycle

Artifacts management system
CI/CD tools
Kafka lifecycle
Development of Cloud infrastructure

Release management & engineering
Development environments
Deployment pipelines for infrastructure

SDLC processes
Deployment of microservices
Base VM for the on-premise product

Product Delivery
DevOps-related topics
Decrease ownership per team
April 2022

Access rights management
Repository management system
Artifacts management system
CI/CD tools
Release management & engineering
SDLC processes
Deployment of microservices

**Engineering Productivity**
development-related topics

Kubernetes lifecycle
Istio lifecycle
Kafka lifecycle
Development of Cloud infrastructure
Deployment pipelines for infrastructure
Development environments
Base VM for the on-premise product

**Platform Systems**
product-related topics
Decrease ownership per team
January 2023

Access rights management
- Repository management system
Artifacts management system
- CI/CD tools
- Release management & engineering
SDLC processes
- Deployment of microservices

**Engineering Productivity**
development-related topics

Kafka lifecycle
Development of Cloud infrastructure
- Deployment pipelines for infrastructure
Development environments

**Platform Systems**
product-related topics
Decrease ownership per team
Vision for the future

Access rights management
  Repository management system
Artifacts management system
  CI/CD tools
Release management & engineering
SDLC processes
  Deployment of microservices

Kafka lifecycle
Development of Cloud infrastructure
Deployment pipelines for infrastructure
Development environments
Decrease cognitive load :: Action items

- Decrease the *ownership of a team*
- Maintain a roadmap for *work prioritisation*
- Set efficient support: round robin support person or Tier 1 support team
- Introduce a PM role [team structure]

Develop self-service platforms
DevOps teams can easily become a bottleneck

- I need access to X
- We need a new Jenkins controller/agent
- We need a new repository
- We need to change the settings of a repository
- We need to deploy X for our new feature
Develop self-service platforms :: Examples

- RBAC-as-Code
- Jenkins-as-Code / Ephemeral agents
- Repository creation and management -as-Code
- CD pipeline / Infrastructure-as-a-Service
Develop self-service platforms :: Results

For developers

- Autonomy in obtaining the required services and tools
- Faster feedback loop
- Reduced cognitive load [4]

For the DP team

- Better scalability and throughput
- Improved flow state
- Less support tickets

Number of open support tickets

Sep 2021 – Sep 2022

- To Do
- In Validation
- In Progress
Number of open support tickets
Sep 2022 – Sep 2023

- Rollout of the CD pipeline
- Migration to a new tool for repository management
- Improved format for environment specific configuration

To Do
In Validation
In Progress
Develop self-service platforms :: Action items

- Treat the self-service platforms as a product [work prioritisation]
- Embedded governance & security policies
- Facilitate adoption [communication]
- Design for habitability: Provide intuitive and safe interface for the users [5]

Focus on quality
Bring QA knowledge in the team

**Dedicated QA engineer**

- Dedicated focus on quality: protected from pressure to deliver new increments
- Hard to find someone with knowledge of IaC technologies

**DevOps/Platform engineer with a QA background**

- Enthusiastic for test automation and improving test practices
- Great knowledge of IaC technologies
Focus on quality :: Examples

Ensure compatibility between CI runners and the standard build tools

Validation of requirements on each PRs for deployment of microservices

Schema validation of YAML configuration for self-service platforms

---

**CHIHUAHUA SYNDROME**
MESSY, UNVALIDATED HAND-ENTERED DATA

<table>
<thead>
<tr>
<th>Dog Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeds ↑</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>BOXER</td>
</tr>
<tr>
<td>BULLDOG</td>
</tr>
<tr>
<td>CHE HUA HUA</td>
</tr>
<tr>
<td>CHE-HUA-HUA</td>
</tr>
<tr>
<td>CHE-WANA</td>
</tr>
<tr>
<td>CHEE-HUA-HUA</td>
</tr>
<tr>
<td>CHEEHUAHUA</td>
</tr>
<tr>
<td>CHEHUHUA</td>
</tr>
<tr>
<td>CHEHAHA</td>
</tr>
<tr>
<td>CHEHANA</td>
</tr>
<tr>
<td>CHIHAAHA</td>
</tr>
<tr>
<td>CHI HUA HUA</td>
</tr>
<tr>
<td>CHIHAWA</td>
</tr>
<tr>
<td>CHIHAWA</td>
</tr>
<tr>
<td>CHIEHUHUA</td>
</tr>
</tbody>
</table>

GOSH! SO MANY

Chihuahua syndrome, [https://sketchplanations.com/](https://sketchplanations.com/)
Focus on quality :: Results

For developers

- Better productivity and experience using the provided services and tools
- Improved flow state

For the DP team

- Less support tickets
- Move to proactive issue resolution
- More time for strategic work
Focus on quality :: Action items

- Bring QA knowledge in the team [team structure]
- Quality is a shared mission in the DP team [work prioritisation]
- Introduce alerts to detect important failures and react fast to fix issues
Harness the power of metrics
Voice of the developer

- Main pain-points highlighted by the developers
- Struggles visible on public chats
- Launch surveys to get feedback
- Statistics from support tickets

Use metrics tailored for the initiative

- Get metrics before rolling out changes to the teams
  - 10x more deployments in a global integration environment
- Measure adoption
  - More than 50% decrease of the usage of the legacy method
Metrics to follow adoption

### Pending
Since 8 hours ago
- Microservice Pending
- mnt-demo-kit-release
- mnt-integration-tests
- nl2nql-release
- nlp-gateway-release
- sentry-gateway-release
- svc-appsearchprovider

### Completed
Since 8 hours ago
- Microservice Complete
- act-device-watchdog-re
- act-downstream-acks-p
- act-executions-api-requ
- act-executions-janitor-h
- act-executions-janitor-rr
- act-nql-scheduler-result

### Onboarding
Since 8 hours ago

#### Microservices (295)
- Completed: 211 (71.53%)
- Pending: 61 (20.68%)
- Not Started: 23 (7.8%)
Harness the power of metrics :: Action items

- Metrics as part of the team mission [work prioritisation]
- Voice of the developer
- Use metrics tailored for the initiative
- Use metrics to follow adoption
Strengthen collaboration with the development teams
Proven customer-centric practices

- Company
- Product announcements
- Documentation
- Demos & trainings
- Technical support
- Customer success program

Customers
Strong team API

DP team

Strong team API[2]

Product announcements
Documentation
Demos & trainings
Technical support
Customer success program

Developers

Strong collaboration with the developers :: Examples

- Weekly meeting for important announcements, news and office hours
- Dedicated communication channels for adoption of big changes
- Support board for existing tools and services
- Documentation with internal setup of tools and governance
- Workshops & trainings for tools and services
- Launch surveys to get feedback
Strong collaboration with the developers :: Action items

- Developer-centric solutions [work prioritisation]
- Set strong team API
- Establish communication channels for different purposes
Take-home message
Unleash the potential of your teams and get better, faster and stronger results

- Decrease cognitive load
- Develop self-service platforms
- Focus on quality
- Harness the power of metrics
- Strengthen collaboration with the dev teams
Thank you!

ana.petkovska@nexthink.com
LinkedIn: @apetkovska
https://www.nexthink.com/company/careers