

# Streamlining DevEx

## The Power of CI/CD Standardization and Interoperability



 @IAmJerdog







**Grey Newell**

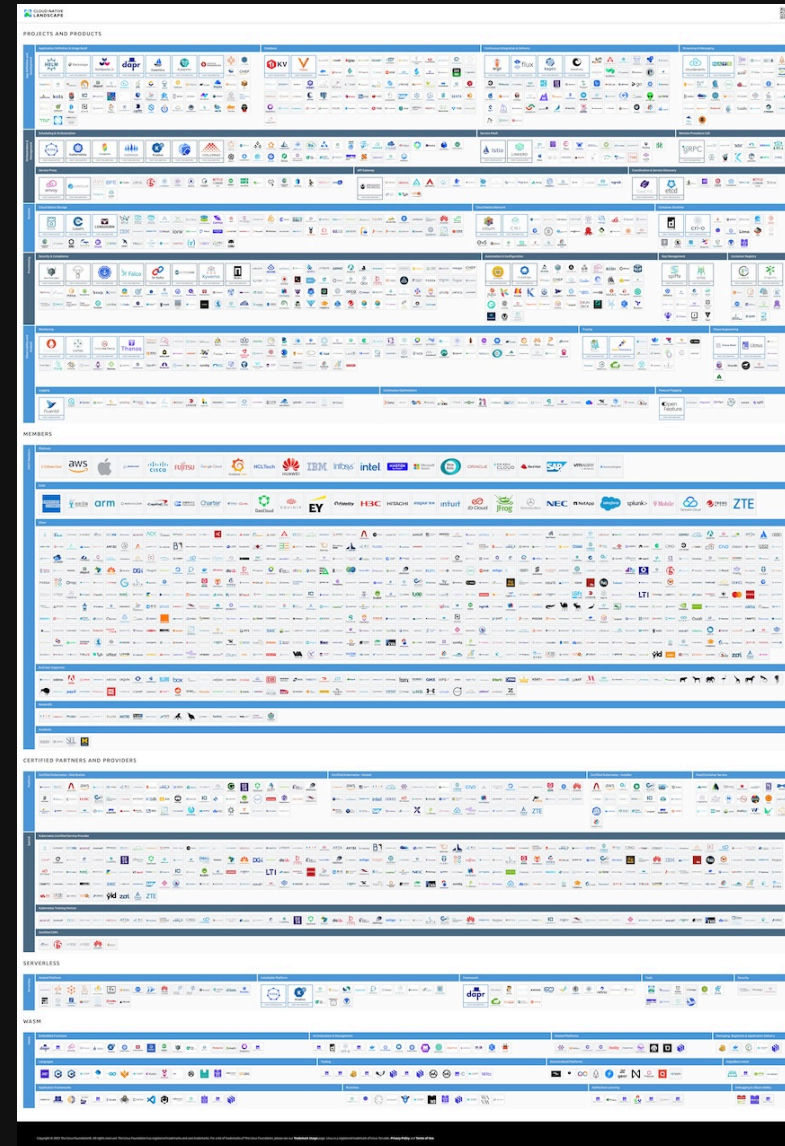
@GreyNewell

This idea is absolutely transgressive. Heretical even.

I'm fascinated. Really hope they post a recording, Jeremy.

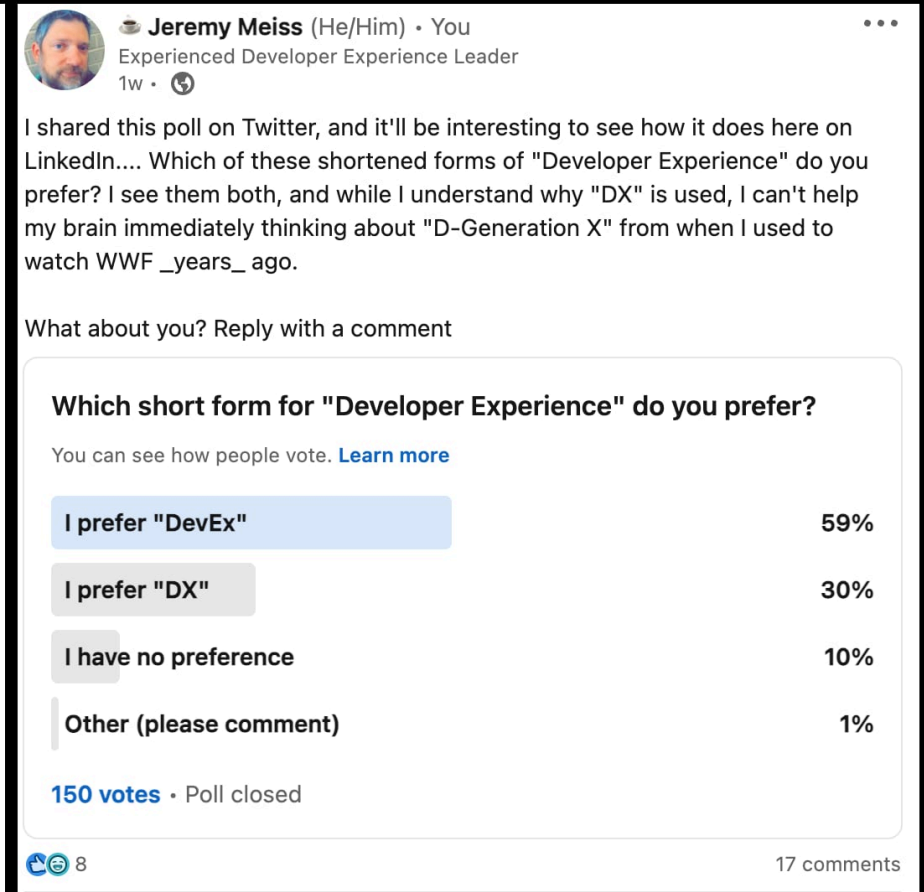
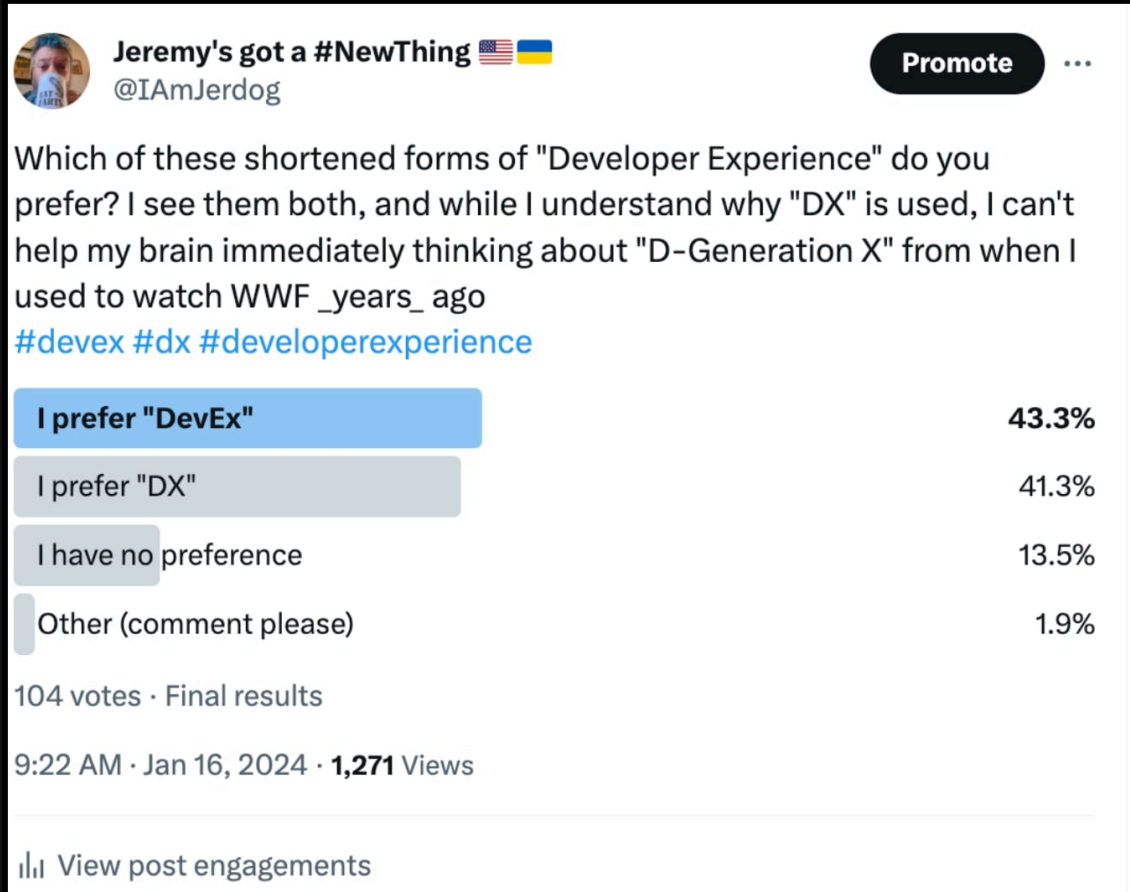
8:14 PM · Dec 19, 2023 · **6** Views

Image: @GreyNewell on Twitter



REF: CNCF Landscape, 29-Jan-2024

# Developer Experience



52% of respondents said "DevEx" (34% "DX")

# Jeremy Meiss

Co-Founder, DevEx Consultant

*DevEx Institute*

<https://DevEx.Institute>

DevOpsDays Kansas City Organizer



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# Developer Experience (DevEx) is...

*"...the **journey** of developers as they learn and deploy technology, which if successful, focuses on eliminating obstacles that hinder a developer or practitioner from achieving success in their endeavors."*

*-Jessica West, Co-Founder, DevEx Institute*



# DevEx

## A Good Developer Experience



Overall

Satisfaction

OVERL SAFISATON



EFFECIENCY

EFFECIENCY

Good Developer & Technology

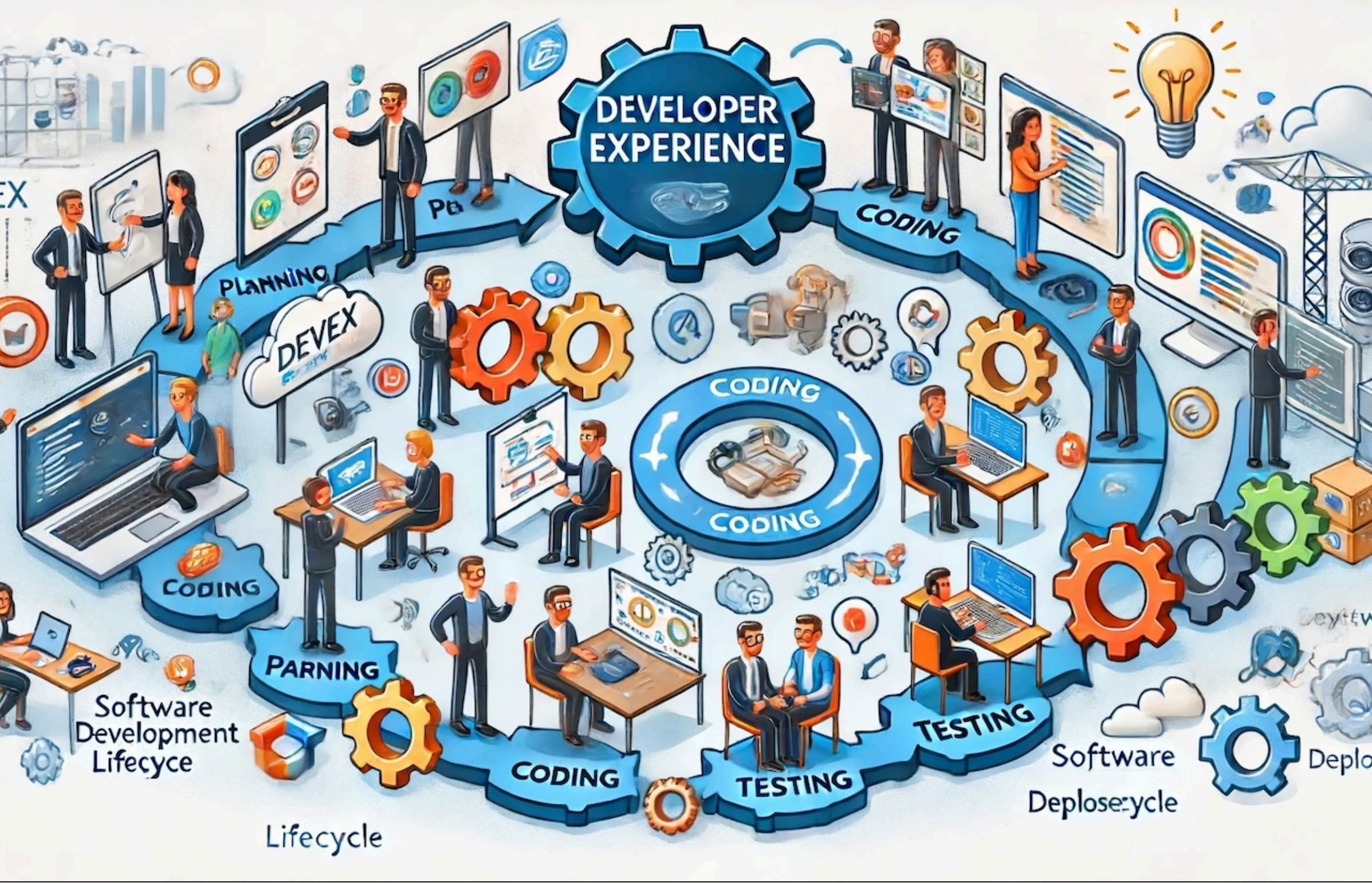
DEVELOPER

EFFECIENCY

GOOD TOOL  
EFFEC










# DevEx isn't new

 Cornell University

arXiv > cs > arXiv:1312.1452

Computer Science > Software Engineering

[Submitted on 5 Dec 2013]

**Developer Experience: Concept and Definition**

Fabian Fagerholm, Jürgen Münch

New ways of working such as globally distributed development or the integration of self-motivated external developers into software ecosystems will require a better and more comprehensive understanding of developers' feelings, perceptions, motivations and identification with their tasks in their respective project environments. User experience is a concept that captures how persons feel about products, systems and services. It evolved from disciplines such as interaction design and usability to a much richer scope that includes feelings, motivations, and satisfaction. Similarly, developer experience could be defined as a means for capturing how developers think and feel about their activities within their working environments, with the assumption that an improvement of the developer experience has positive impacts on characteristics such as sustained team and project performance. This article motivates the importance of developer experience, sketches related approaches from other domains, proposes a definition of developer experience that is derived from similar concepts in other domains, describes an ongoing empirical study to better understand developer experience, and finally gives an outlook on planned future research activities.


Comments:

5 pages. The final publication is available at [this http URL](#).

Subjects:

Software Engineering (cs.SE)

Cite as:

arXiv:1312.1452 [cs.SE]  
(or [arXiv:1312.1452v1 \[cs.SE\]](#) for this version)  
<https://doi.org/10.48550/arXiv.1312.1452> 

Journal reference:

Proceedings of the International Conference on Software and System Process (ICSSP 2012), pages 73–77, Zurich, Switzerland, June 2–3 2012

REF: F. Fagerholm and J. Münch, “Developer experience: Concept and definition,” 2012 International Conference on Software and System Process (ICSSP), Zurich, Switzerland, 2012.

# DevEx isn't new

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*"...developer experience could be defined as a means for capturing how developers think and feel about their activities within their working environments, with the assumption that an improvement of the developer experience has positive impacts on characteristics such as sustained team and project performance."*

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# Point of clarification

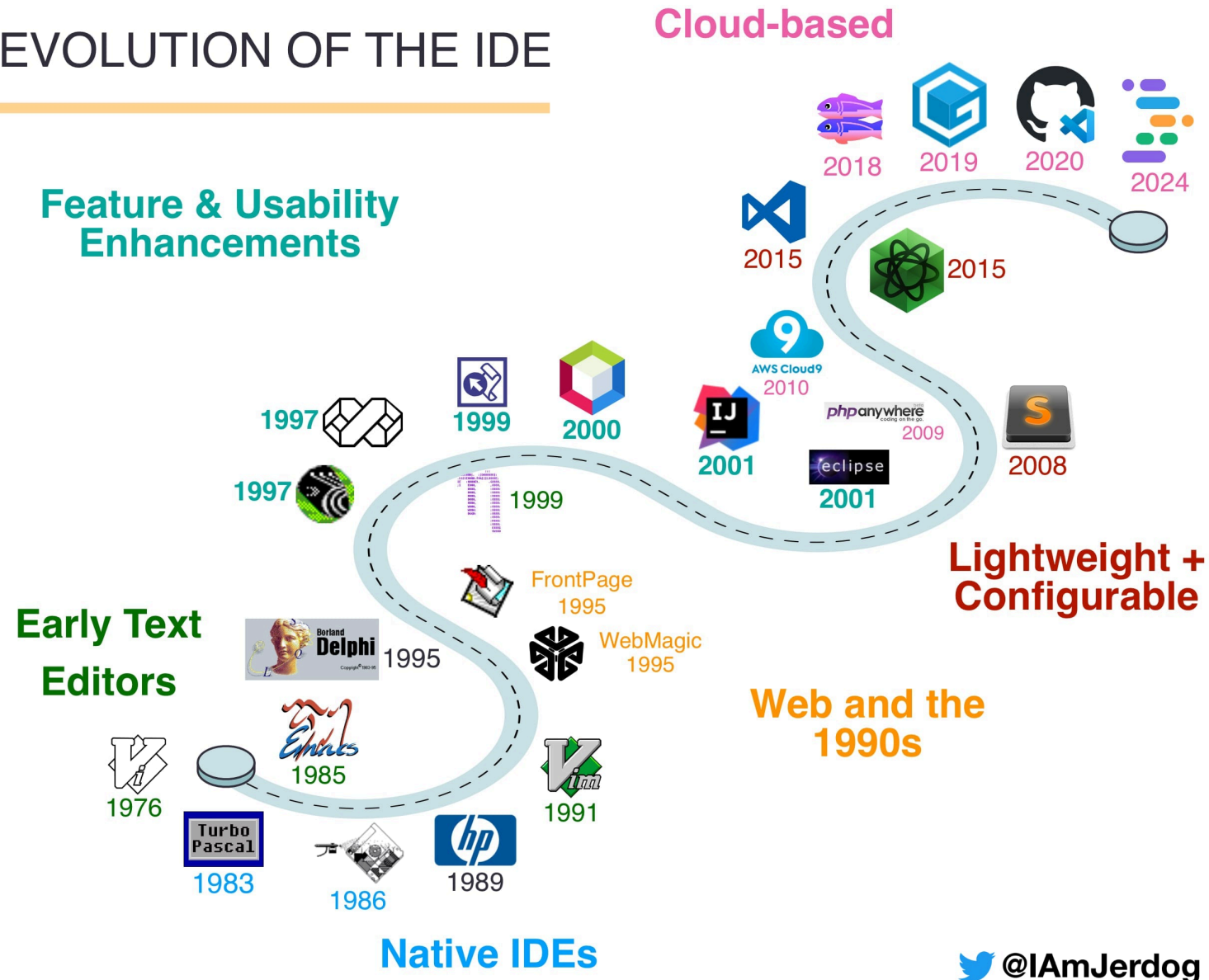
- “DevEx” by default focuses on “developer”
- View “DevEx” as a whole of the lifecycle







# EVOLUTION OF THE IDE









CI/CD








# CI/CD Standardization



# CI/CD Interoperability





# Implementing CI/CD Standardization







# Implementing CI/CD Standardization

## Assessment and Analysis

- Thoroughly assess your current CI/CD pipelines
- Identify pain points and bottlenecks
- Analyze specific requirements and constraints





# Implementing CI/CD Standardization

## Define Goals

- Define goals and objectives, align with strategy and objectives
- Determine success, like reduced deployment times / error rates

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# Implementing CI/CD Standardization

## Select Tools and Practices

- Choose tools & practices aligned with organization needs, goals
- Establish standard templates and configurations for pipelines
- Enforce coding standards for consistency and readability





# Implementing CI/CD Standardization

## Version Control

- Store pipeline configs as code in version control systems
- Implement branching and pull request strategies



# Implementing CI/CD Standardization

## Automated Testing and Validation

- Integrate automated testing and validation into templates
- Implement code reviews and peer validation early in dev process





# Implementing CI/CD Standardization

## Documentation and Training

- Create comprehensive docs for processes, configs, best practices
- Provide training to ensure understanding and effective use





# Optimizing CI/CD Standardization





# Optimizing CI/CD Standardization

## Continuous Monitoring and Improvement

- Detect pipeline issues and bottlenecks in real-time
- Establish culture of regular reviews and updating pipelines





# Implementing CI/CD Standardization

## Governance and Compliance

- Implement governance policies to enforce pipeline standards
- Validate compliance with industry regulations / internal standards
- Regularly audit and assess adherence to standardized practices





# Implementing CI/CD Standardization

## Scaling and Adaptation

- Ensure standardized templates can scale and adapt
- Maintain flexibility to accommodate unique project requirements





# Implementing CI/CD Standardization

## Feedback Loop and Collaboration

- Foster collaborative environments where feedback & contributions encouraged
- Continuously communicate benefits of standardized pipelines & celebrate successes





CI/CD  
PIPELINE

PIPELINE

TESTING

TESTING

TESTING

DEPLOY

DEPLOYMENT

DEPLOYMENT

TESTING

DEPLOYING

MEPLOYATION

MEPLOLYATIEND

OPTIMIATION





# The Role of Interoperability





# Interoperability in CI/CD

## Streamlined workflows

- Reduce manual intervention, increase automation with templates + reusable config
- Eliminate waste and improve efficiency
- Deliver faster with higher quality + better developer experience





# Interoperability in CI/CD

## Cross-functional collaboration

- Have shared goals and break down silos
- Improve resource utilization and efficiency
- Leverage strengths and expertise of each team





# Interoperability in CI/CD

## Flexibility and adaptability

- Respond quickly to rapid change by adjusting workflows, add new tools, adopt new practices
- Experiment and innovate quickly by leveraging new tools and technologies
- Increase efficiency by leveraging existing resources and tools









# Advanced Interoperability

## Ecosystem integration

- Assemble customized toolchain tailored to your requirements
- Minimize manual intervention via End-to-end automation
- Greater visibility + traceability via aggregation of info



# Role of community and Open Source

- Address potential interoperability challenges (case studies, submitting fixes)
- Create external community around your tools, gathering feedback directly





# Advanced Interoperability

## Troubleshooting and debugging

- Identify and resolve issues early
- Proactive problem solving with data and automation
- Faster resolution and improved reliability





# Advanced Interoperability


## Cross-platform deployment

- Provide uniform approach for diverse platforms
- Reduced complexity and increased efficiency
- Broader reach and greater impact









# CI/CD Interoperability

## Implementation challenges and remedies

### Challenges

Diverse Toolsets & Ecosystems

### Remedy

Prioritize critical dependencies, objectives





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Data formats and schema differences

### Remedy

Prioritize critical dependencies, objectives

Implement unified data formats





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Authentication and Authorization


### Remedy

Prioritize critical dependencies, objectives

Implement unified data formats

Standardize methods, integrate governance





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Implement unified data formats

Authentication and Authorization

Standardize methods, integrate governance

Versioning and compatibility testing

Clear versioning policies, regular compatibility testing





# CI/CD Interoperability

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### Challenges

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Diverse Toolsets & Ecosystems

Prioritize critical dependendencies, objectives

Data formats and schema differences

Implement unified data formats

Authentication and Authorization

Standardize methods, integrate governance

Versioning and compatibility testing

Clear versioning policies, regular compatibility testing

Lack of documentation

Prioritize efforts + allocate resources, implement standards + process









# DevEx reflects an organizations values




Jeremy's at #KCDC 🇺🇸🇺🇦

@IAmJerdog · [Follow](#)



If your company does not already have a process for gathering feedback (internal & external) on your product and/or the tools you use, you will not have a good Developer Experience, and I seriously question your commitment to it.

10:57 AM · Jan 25, 2024 

 26  Reply  Copy link

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# DevEx is...

*“ruthlessly eliminating  
barriers (and blockers) that  
keep your developers from  
being successful”*







# Thank You.



Feedback is appreciated.



/in/jeremymeiss



@IAmJerdog



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