

Questionnaire used in *Survey of Established Practices in the Life Cycle of Domain-Specific Languages*

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This document contains the questionnaire used for the paper *Survey of Established Practices in the Life Cycle of Domain-Specific Languages*. The questionnaire appeared as a Google Forms document.

[Introduction]

Many domain-specific languages (DSLs) have been designed, implemented, and maintained since they started to appear in the 1990s. In this survey, we set out to investigate the life-cycle of DSLs after they have made their first appearance. We look for your input that may point other DSL practitioners and academics to best practices and new problems with DSL development, maintainance, and usage.

The survey consists of 18 questions and takes approximately 10 to 15 minutes to fill. If you prefer to answer the questions in a free-form text, you may do so and send the answers to hstb@itu.dk.

If you have received a mail about multiple DSL projects, please fill out an additional survey for each language. If you have other relevant DSL projects not listed by us in your mail, feel free to fill out additional surveys for said projects.

Please indicate if a free text answer contains business-sensitive data (e.g., write "Sensitive:"). Otherwise, we may choose to publish it as a representative answer in an anonymised form.

(GDPR) I accept that the following data is gathered for the purpose of research at the IT University of Copenhagen. The results may be published in aggregated form along with representative anonymised answers (unless indicated otherwise)

☐ Yes

What is the name of your DSL?

When was the DSL introduced? (Year)

Why was the DSL developed?

- ☐ To separate business logic from application logic
- ☐ To enable domain experts to write business logic
- ☐ To improve program conciseness and readability
- ☐ To improve program performance
- ☐ To improve program correctness
- ☐ To improve programmers' efficiency
- ☐ Other..

How would you rate the programming experience of the intended users.

- ☐ 1 (No experience)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 (Expert experience)

Design and Development

In what setting was the DSL developed?

- ☐ In-house company development
- ☐ Outsourced development
- ☐ Industrial consortium development (e.g., a collective effort within an industry)
- ☐ Academic development
- ☐ Open-source-community development
- ☐ Other..

What was the approximate length of the increments used to develop the DSL?

- ☐ 1 month
- ☐ 2 months
- ☐ 3 months
- ☐ 4 months
- ☐ 5 months
- ☐ 6 months
- ☐ > 6 months

Which methods were used to evaluate the usability of the DSL during design and development?

- ☐ Usability tests
- ☐ User workshops
- ☐ Heuristic evaluation
- ☐ Expert evaluation
- ☐ Other..

How were users involved in the language design?

How would you rate the level of user involvement during the language design?

- ☐ 1 (No involvement)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 (Involvement in all decisions)

Launch

How did you seek to encourage users to use the DSL?

- ☐ An attractive development environment
- ☐ Training material
- ☐ Comprehensive language documentation
- ☐ Help to transition from old solutions into the new language
- ☐ Backwards compatibility to old solutions
- ☐ Company Policy
- ☐ Other..

Do you think these efforts affected the success of the DSL? Why?

Life-cycle

What factors have contributed to evolving the DSL after its launch?

- ☐ New areas of application (e.g., the language used to specify bank products now also specifies pension products)
- ☐ Changes in the existing application domain (e.g., the language must now ensure specifications remain GDPR compliant)
- ☐ Changes in internal technologies (i.e., technologies the DSL interfaces with that are maintained by the DSL implementors.)
- ☐ Changes in external technologies (i.e., technologies the DSL interfaces with that are external to the DSL implementors.)
- ☐ Changes in implementation technologies
- ☐ New user wishes (i.e., users point to aspects of the language that can be improved)
- ☐ An agile development process
- ☐ Other..

Which changes have been made to the DSL from a user perspective?

- ☐ Addition of new language constructs or syntactic sugar
- ☐ Major changes to the general language syntax
- ☐ Expanding the application domain of the DSL
- ☐ Major revisions of the learning materials
- ☐ Major revisions of the documentation
- ☐ Major improvements of the development environment
- ☐ Major improvements of the language implementation (e.g., responsiveness, execution efficiency, or error messages)
- ☐ Breaking updates (i.e., updates that are not backwards compatible)
- ☐ Other..

Do you think the above changes affected the success of the DSL? Why?

End of life

When do you consider the DSL to have been phased out of most usages? (Best estimate if in the future)

What was, or will be, the primary reason for the DSL to have been phased out? (Best estimate if in the future)

Looking back, are there any efforts that you would have taken during any of the previous phases? Why did you not take them at the time?

May we contact you for clarifications?

- ☐ Yes
- ☐ No

May we contact you for a possible 30 minutes interview?

☐ Yes

☐ No