Continuous Assessment

Maturity improvement through Continuous Assessment.
By Bart de Best

Context:
This story is based on an assignment from a government organisation to boost the maturity of DevOps teams. The results have been described anonymously to maximise confidentiality.

Challenge:
The challenge of this assignment was to advise in which areas the DevOps teams should improve without knowing the organisation and the DevOps working methods of the DevOps teams as an assessor. The knowledge and skills of the DevOps teams were also insufficient to answer the assessment questions.

Solution:
The solution for this assignment was found in the concept of Continuous Assessment. This blog discusses how Continuous Assessment has been applied using the following steps:
1. Provide training on DevOps best practices
2. Explaining the DevOps assessment
3. Planning the DevOps assessment sessions
4. Carrying out the DevOps assessments
5. Use a off-site meeting to determine the DevOps roadmap

1. Provide training on DevOps best practices

The basis of the assessment is the DevOps best practices as defined in the Continuous Everything concept. This concept fleshes out 15 aspects of BizDevSecOps as defined in figure 1. A Continuous Everything book has been published for each aspect.

All 15 Continuous Everything books consist of the following structure:
• Basic concepts and basic terms
• What is the business case for implementing this aspect of Continuous Everything?
• What things do we want to change in terms of image, ownership, organisation, tooling, and people?
• Which architecture models and principles are relevant?
• What is the value stream to execute this aspect of Continuous Everything?
• Which best practices are useful for this?
• Assessment to determine the degree of maturity of this Continuous Everything aspect area.

Figure 1, Continuous Everything concept.

The training provided first provided a practical explanation of what DevOps entails and how it should be applied. The selected Continuous Everything aspects were then discussed one by one in the training using many examples. This made it possible to have the assessment questions answered.

1. Explaining the assessment
The assessment is made up of two dimensions, namely maturity and areas of interest. The maturity is based on the Capability Maturity Model and has 5 levels of maturity. As shown in figure 2.

5 — The flow is integrated in the business flow and the flow of external parties in the chain. — Optimizing

4 — The flow in the pipeline is measured based on predefined quality criteria. — Quantitatively

3 — The entire flow is supported by an integrated and automated E2E pipeline. — Consistent

2 — The flow is defined to support the value stream in a fixed work sequence. — Repeatable

1 — The flow is undefined, but minimal DevOps capabilities are in place to perform basic operations. — Ad Hoc
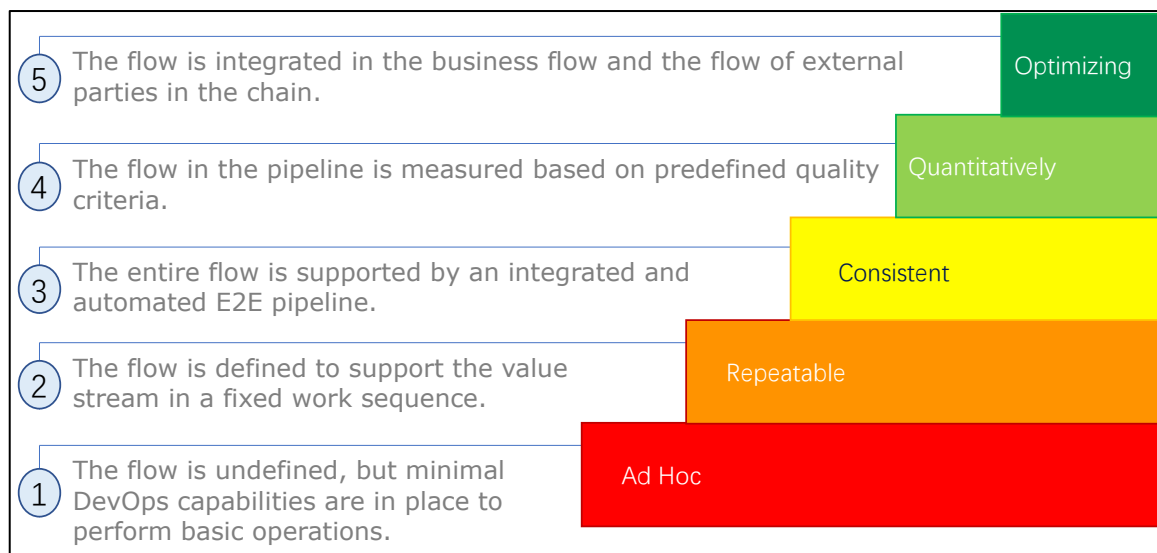
Figure 2, The assessment maturity levels.

The focus areas are described in figure 3. Together with the maturity levels, these form the classification of assessment questions per Continuous Everything aspect area.
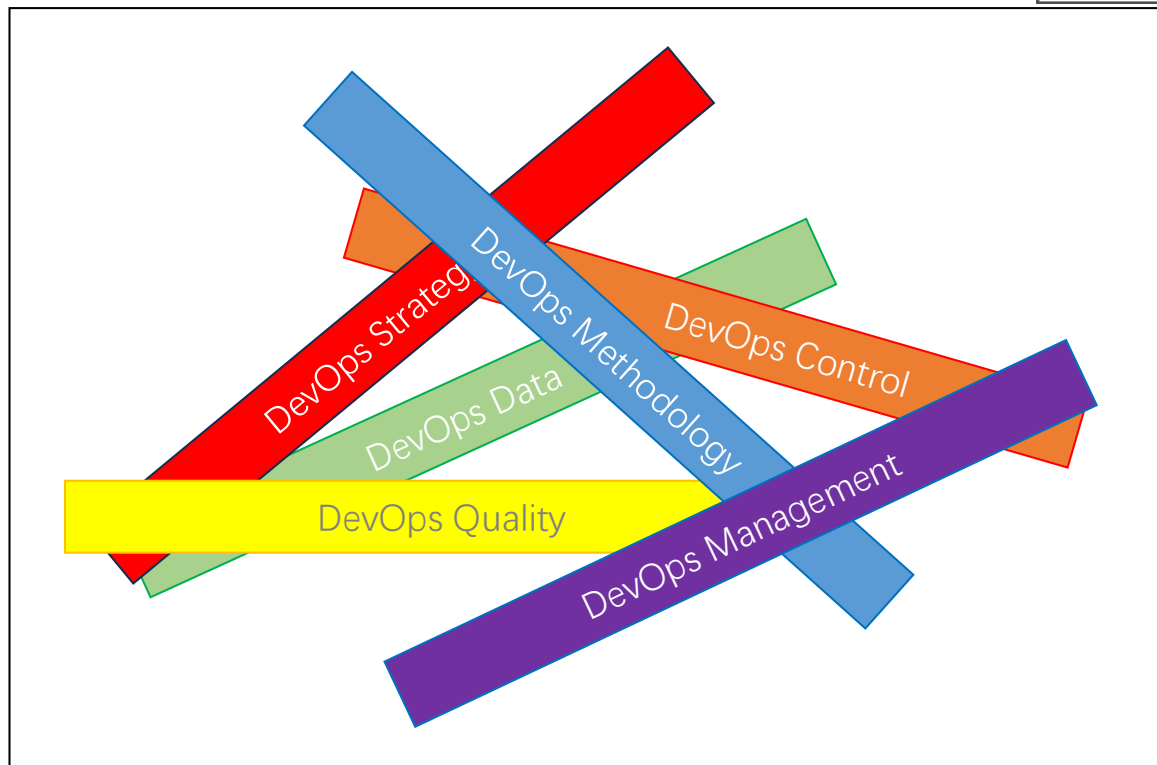
The correlation between maturity and areas of interest is shown in figure 4 in the form of a spider. Maturity increases from the inside out as each ring is divided into six focus areas. Each cell in the spider contains at least one question that must be answered in the assessment.
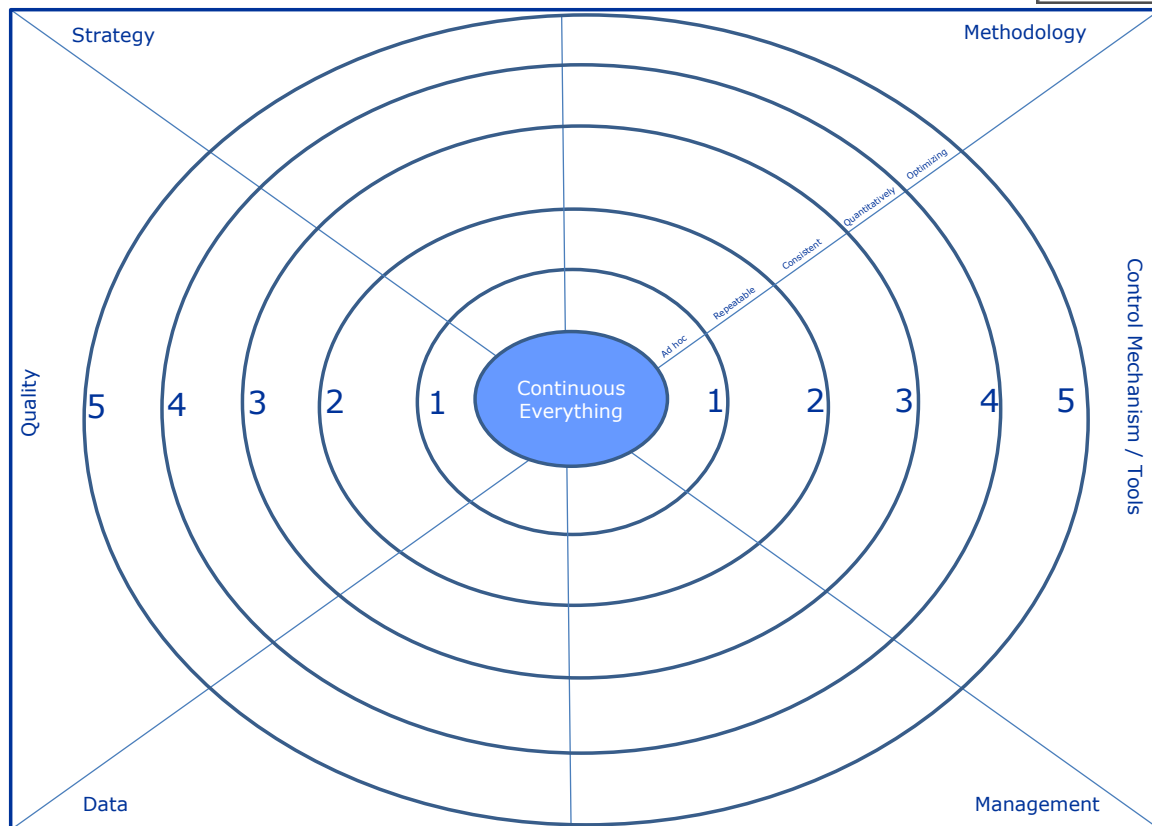
Figure 4, The template of the Continuous everything assessment.
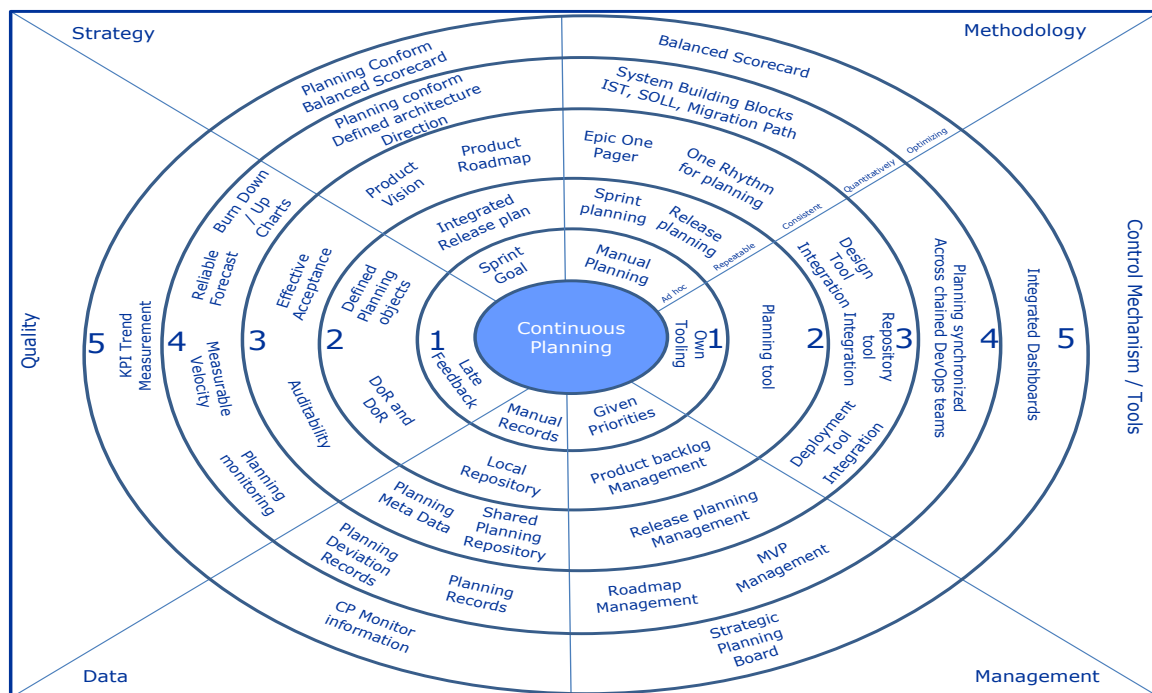

Figure 5, The topics of the assessment of Continuous Planning.

An example of one of the fifteen assessments is that of Continuous Planning as shown in figure 5. Figure 6 shows all 15 aspect areas of Continuous Everything.
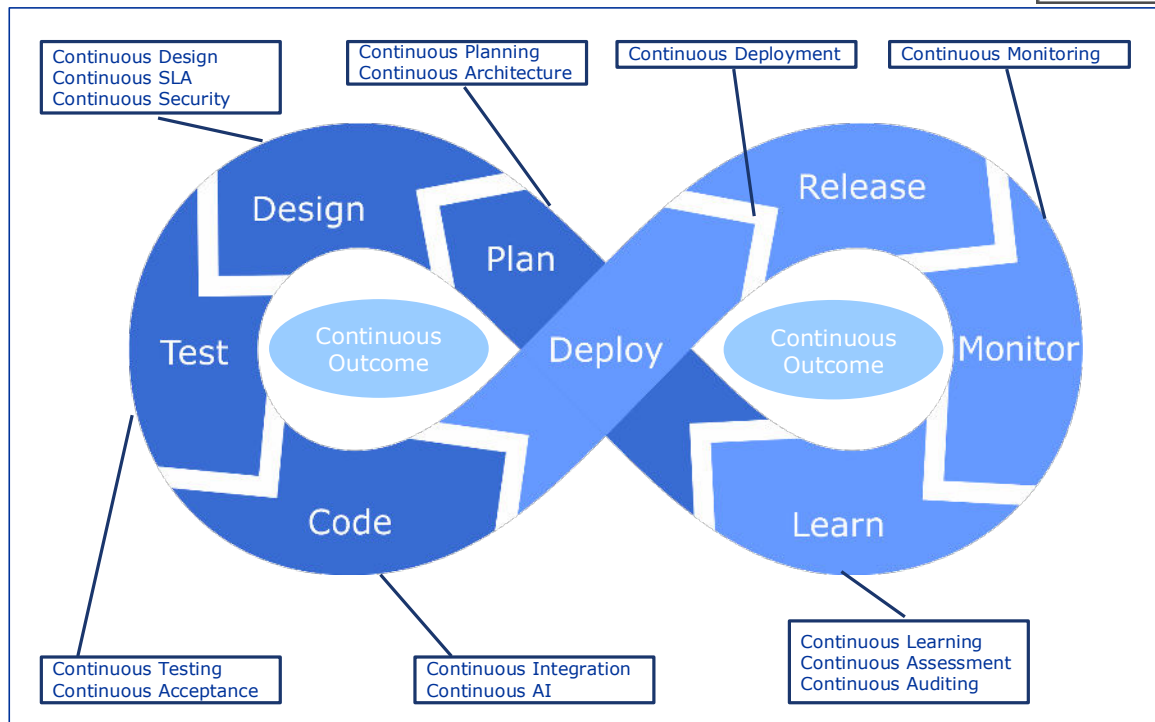
Figure 6, The 15 Continuous Everything aspect areas.

15 spider diagrams have been drawn up to explain the assessment questions.

1. Planning the DevOps assessment sessions
An important success factor of the assessment is scheduling the assessments in a timely manner. A 2-hour session is required for each Continuous Everything aspect area with two specialists from the DevOps teams to be assessed. It is best to take the assessment immediately after the training, otherwise the issues of the day will fade the knowledge and skills acquired. Ideally, four assessments are organised in one day.

2. Carrying out the DevOps assessments
The implementation of the assessments is very refreshing for everyone. Many things appear to have already been implemented even though not everyone is aware of this. There are also many eye-openers, which gave the DevOps engineers a lot of energy.

The results are shown in figure 7. It is clear what differences there are in terms of maturity and where improvements are possible. The scores are constructed by assigning 2 points to a 'Yes' answer to an assessment question, 1 point to a 'Yes/No' and 0 points to a 'No'. The percentage is the score per cell divided by the maximum points that can be achieved.

	CE-CP	CE-CN	CE-CT	CE-CI	CE-CD	CE-CM	CE-CL	CE-CY
Level 5	0	0	0	5	5	0	0	0
Level 4	5	5	0	59	50	6	14	0
Level 3	38	25	26	80	80	27	25	81
Level 2	79	81	95	88	90	79	79	95
Level 1	83	91	100	95	100	86	81	100

CP = Continuous Planning   CD = Continuous Deployment
CN = Continuous Design   CM = Continuous Monitoring
CT = Continuous Testing   CL = Continuous Learning
CI = Continuous Integration   CY = Continuous Security

< 20%	
>= 20% < 80%	
>= 80%	

Figure 7, The anonymised assessment results.

Figure 8 shows the score of one aspect area. This makes it immediately visible which topics need improvement.
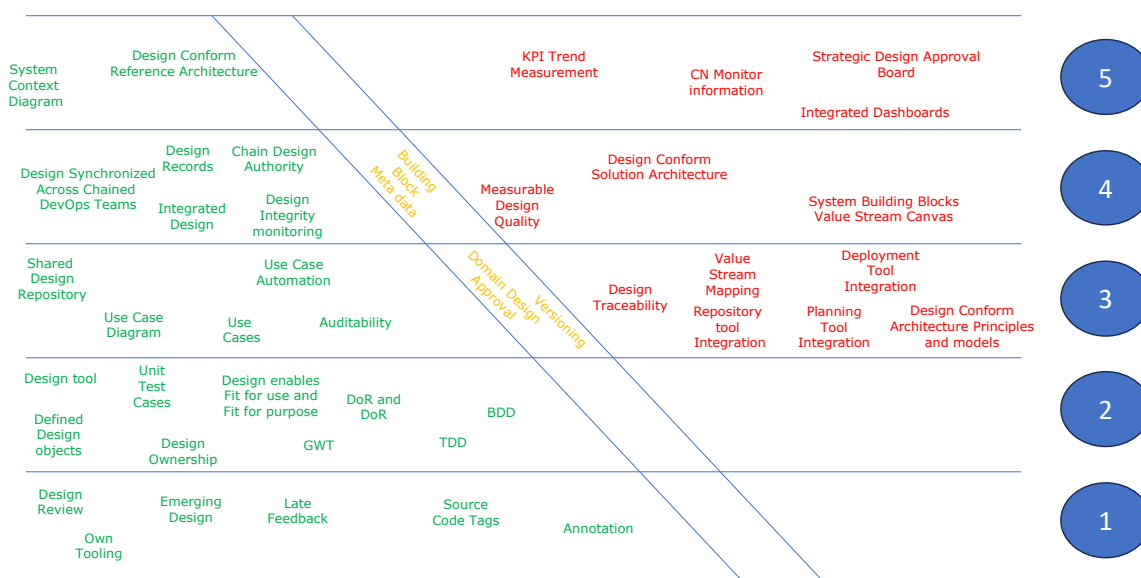

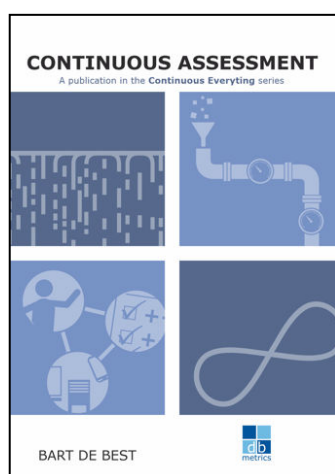Figure 8, The anonymised score of one aspect area.

Figure 9 shows the same score in the form of a spider. This also makes it easy to see which area of interest scores better than another.

Figure 9, The anonymised score of one aspect area in the form of a spider.

1. Use Off-site meeting to determine the DevOps roadmap.

The heath day was held to allow the DevOps teams to jointly determine the low hanging fruit. These are the improvements that can be achieved within three months. The high-hanging fruit improvements were then also selected that can be achieved in the longer term, i.e. 9 months, i.e. after the realisation of the low-hanging fruit. The outcomes of these two sessions were used to compile a DevOps roadmap and to determine the choice of control. The day generated a lot of positive energy from both the DevOps engineers and management. This is essential for the changes to actually take place. A day to never forget!

This DevOps roadmap and the positive energy obtained makes it possible to implement the Continuous Assessment approach. In every DevOps sprint, attention is paid to the realisation of the improvement points. New improvement points are also added where necessary. Everyone couldn't wait to start with the DevOps roadmap, which is the compliment on the assessment - bravo!

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https://www.dbmetrics.nl/ce-en/continuous-assessment-en/