

# Investigating the Implementation of KPIs in Large-Scale Agile Development

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#### Introduction





## Organizations

Organization	Sector	Company size (Employees)	Number of interviews
BankCo	Finance	47.000+	2
CarCo1	Automotive	36.300+	1
CarCo2	Automotive	120.700+	1
ConsultCo	Consultancy	270.000	5
HealthCareCo	Healthcare	54.000	3
RetailCo1	Retail	360.000+	1
RetailCo2	Retail	155.000	1
TelecommunicationCo	Telecommunication	100.700	1
TransportationCo	Transportation	337.500	1
Inverso	Insurance	120+	1
VKB	Insurance	6.800+	3

#### Large-Scale Agile Software Development (1)

Organization	Start Agile Transformation (in years)	Start Large-Scale Agile Transformation (in years)
BankCo	3-10	3-5
CarCo1	6-10	1-2
CarCo2	6-10	3-5
ConsultCo	-	-
HealthCareCo	11-15	6-15
RetailCo1	3-5	3-5
RetailCo2	6-10	1-2
TelecommunicationCo	11-15	11-15
TransportationCo	3 - 5	3-5
Inverso	1-2	1-2
VKB	1-5	1-5

Ø 6-7 years

Since the start of the agile transformation

**Ø** 4-5 years

Since the start of the large-scale agile transformation

## Large-Scale Agile Software Development (2)



Organisation	Customization	Different Frameworks in Organization	Frameworks
BankCo			SAFe
CarCo1			SAFe, Scrum-of-Scrums
CarCo2			Scrum-of-Scrums, Scrum@Scale
ConsultCo			LeSS, SAFe, Scrum-of-Scrums
HealthCareCo			LeSS, SAFe, Scrum-of-Scrums
RetailCo1			SAFe, Scrum-of-Scrums. Spotify
RetailCo2			LeSS, Nexus, SAFe, Scrum-of-Scrums, Spotify
TelecommunicationCo			LeSS, Scrum-of-Scrums
TransportationCo			SAFe
Inverso			Scrum@Scale
VKB			SAFe, Nexus, Scrum-of-Scrums

## Metrics in Large-Scale Agile Software Development (1)





## Metrics in Large-Scale Agile Software Development (2)



Organization	Team	Program	Portfolio	Organizational	Total	
BankCo	2	6	5	4	17	
CarCo1	6	8	-	-	14	
CarCo2	3	4	-	-	7	on team level in
ConsultCo	12	33	-	2	47	each organisation
HealthCareCo	8	49	-	-	57	
RetailCo1	2	8	-	1	10	Ø 16 Metriken
RetailCo2	10	16	-	-	26	on program level in
TelecommunicationCo	2	10	-	-	12	each organisation
TransportationCo	6	14	-	-	20	
Inverso	8	1	-	-	9	
VKB	13	24	1	3	41	

#### Goals in Large-Scale Agile Software Development



Goals

## Most frequently used metrics





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### Common risks and disadvantages of metrics



#### Reasons for Using Metrics in Large-Scale Agile Software Development



## ТШТ

## Advantages of using metrics



#### Metric-related challenges in large-scale agile software development

Ensuring validity and guality of data 23 14 Identifying correct conclusions and actions based on metric 13 Ensuring availability of data Complexity of development environment complicating calculation and. 12 Reduced validity of metric due to complex environment and. 11 10 Ensure validity of metric Reduced validity of metric due to agile environment 109 Ensure usefulness and value of metric 8 Effort and capacity required to implement metric Considering the heterogeneous nature of the development... 8 8 Avoiding metric optimization to meet goal not value gain Ensuring availability of data 8 Avoiding pressure and negative psycological effects on employees 8 Reasonable configuration and definition of metric Establishing openness and acceptence of metrics 6 6 Avoiding team/program comparisions 5 Interference by management 5 Avoid competition between teams 5 Appropriate tool support Lack of common understanding of metric 4 4 Establishment of understanding of metrics 4 Missing knowledge of correct use of metrics Avoiding demotivation of employees 4 4 Finding correct granularity of measurement Dependencies between teams/programs Reducing traditional mindset towards metrics Avoid feeling of control Difficulty of setting and meeting targets due to complexity and.... Finding responsible persons 3 Lacking understanding by management 3 Top and middle management commitment Avoding distruption of work 2 Ensuring validity of metric 2 Avoid neglegtion of other aspects not targeted by metric 2 Appropriate common communication and reporting of metric 2 No clear responsibility 2 Different target setting by different responsible persons 2 2 Establishing consistent and harmonized measurements 0 10 20 30

Number of mentions

Challenges

## **T**IT sebis

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