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# Challenges in realizing effective supplier integration in the customer multi-project organization

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by Milos Tipsarevic

Ljubljana  
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PROJEKTNO Vodenje V PRAKSI

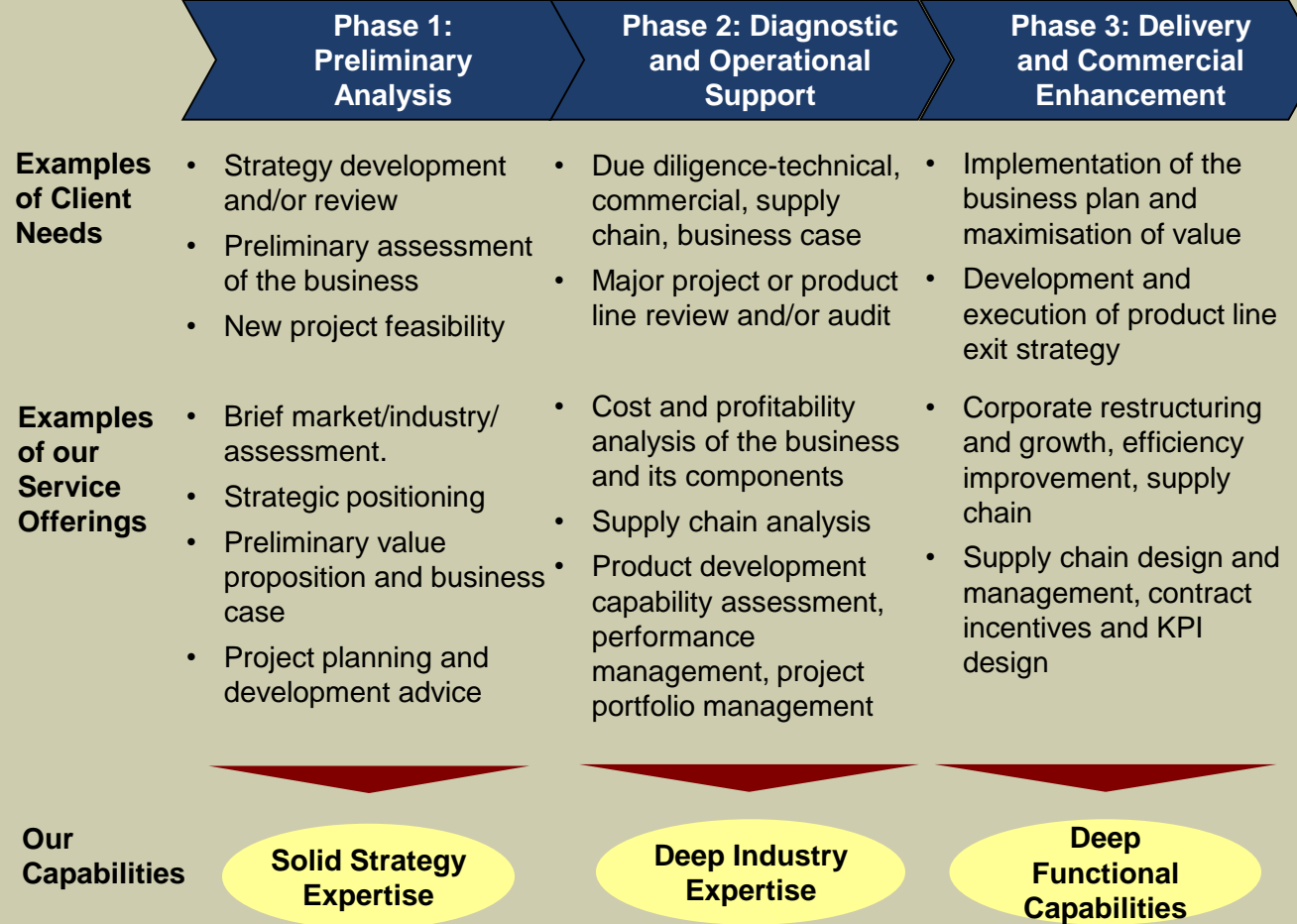
Multi-projektno okolje

22. marec 2018 - Ljubljana, Radisson Blu Plaza Hotel

# Our senior experts have extensive international consulting and operational experience in the manufacturing and infrastructure sectors and work across all stages the investment cycle

## Career Summary

- ▶ **2017- to date: Bluemond**  
Head of Supply Chain
- ▶ 2017 – to date: **Valcon**  
Associate Partner
- ▶ 2011-2016: **Danfoss** Senior Consultant
- ▶ 2005 -2011: **CHEP**  
Engineering manager
- ▶ 1997 - 2005: **Visteon** Product development specialist
- ▶ 1995-1997: **Ford** Engineering graduate trainee

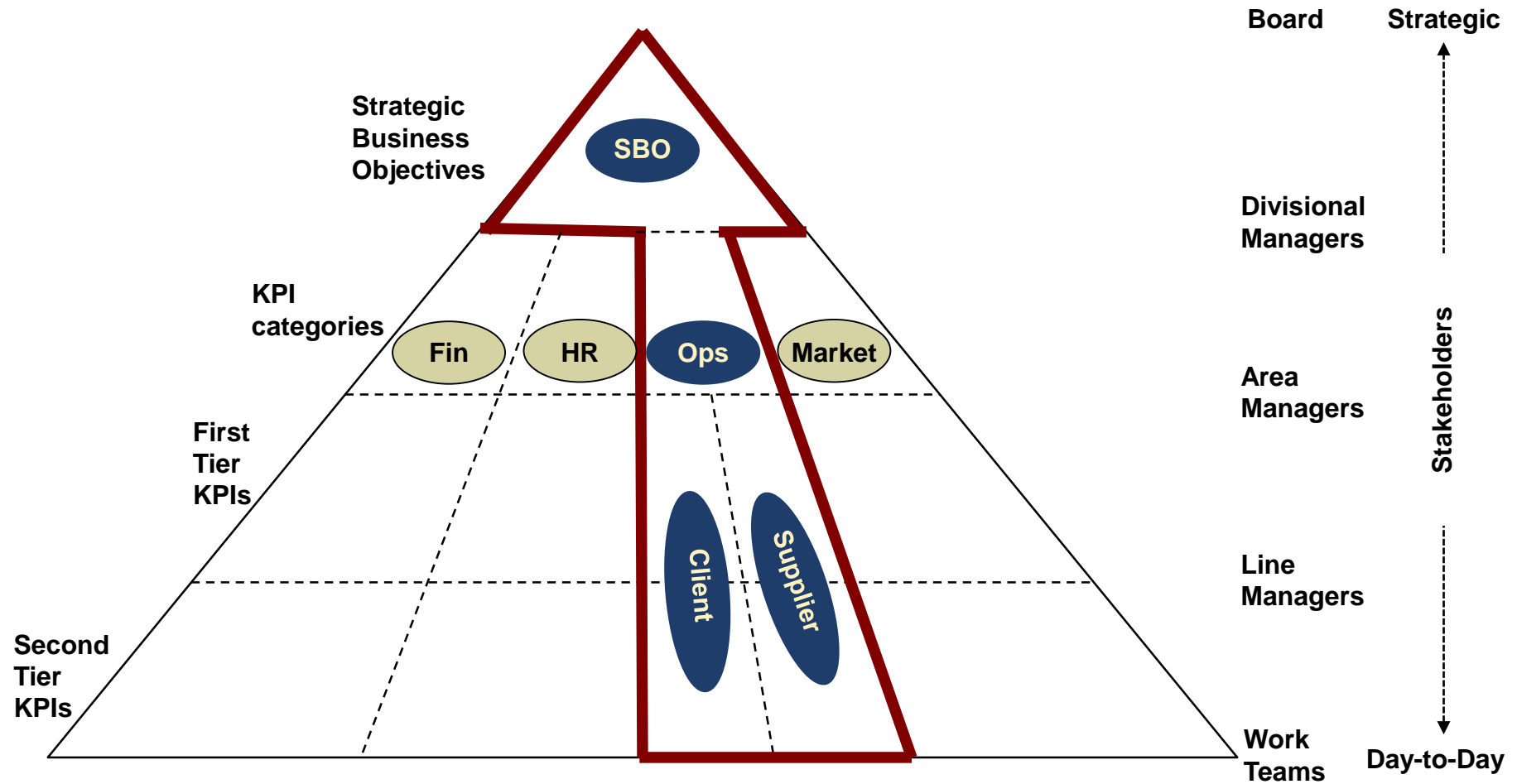


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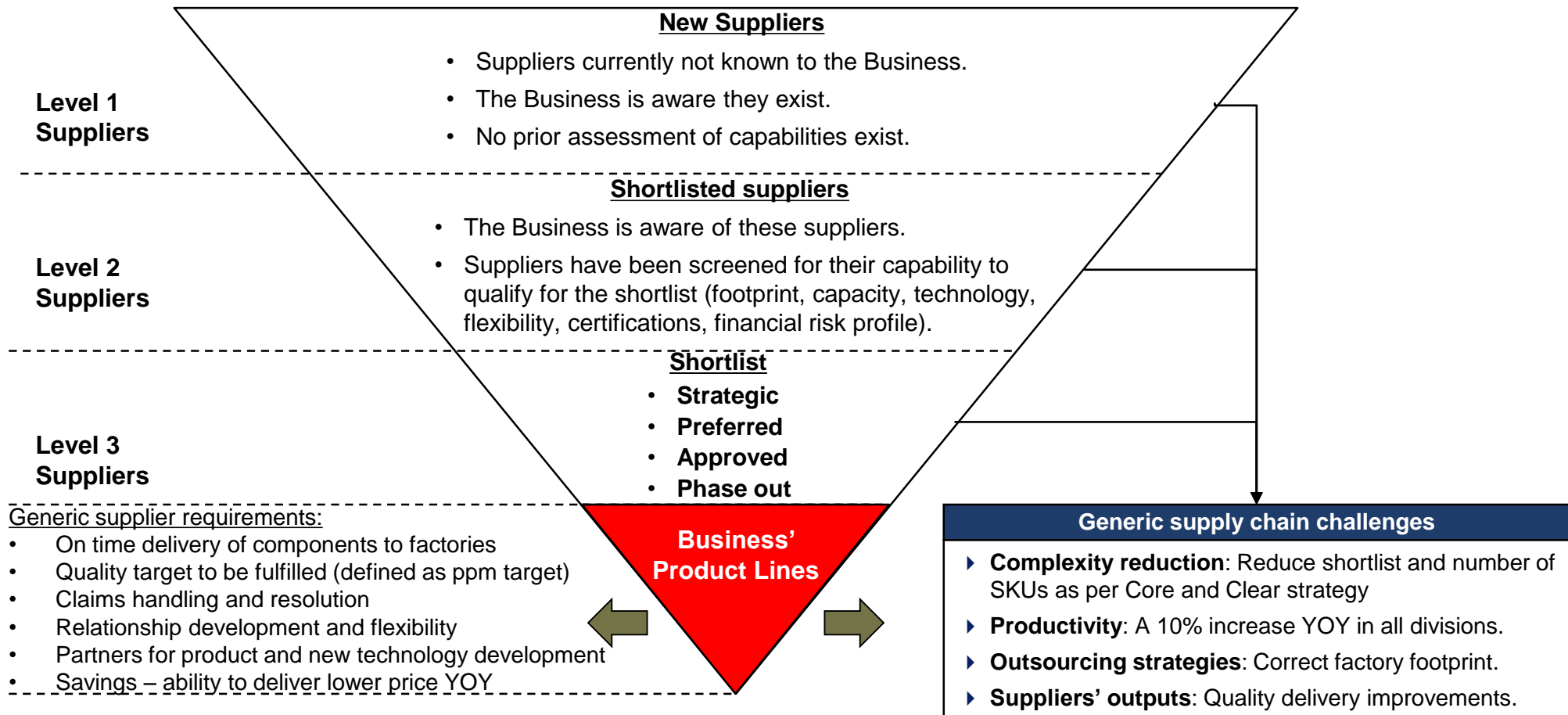
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- ▶ Introduction
- ▶ Key challenges in involving suppliers in complex multi-project customer organisation
- ▶ What can we do to address common mistakes in involving suppliers in projects?

**Experience shows that relevance and consistency of supplier KPIs in relation to corporate goals is only secured when top level strategic goals transparently translate into day-to-day operational targets**



# The Business often selects suppliers through a structured non-competitive process and then sets a series of supplier KPIs to drive their performance in line with the production line's requirements



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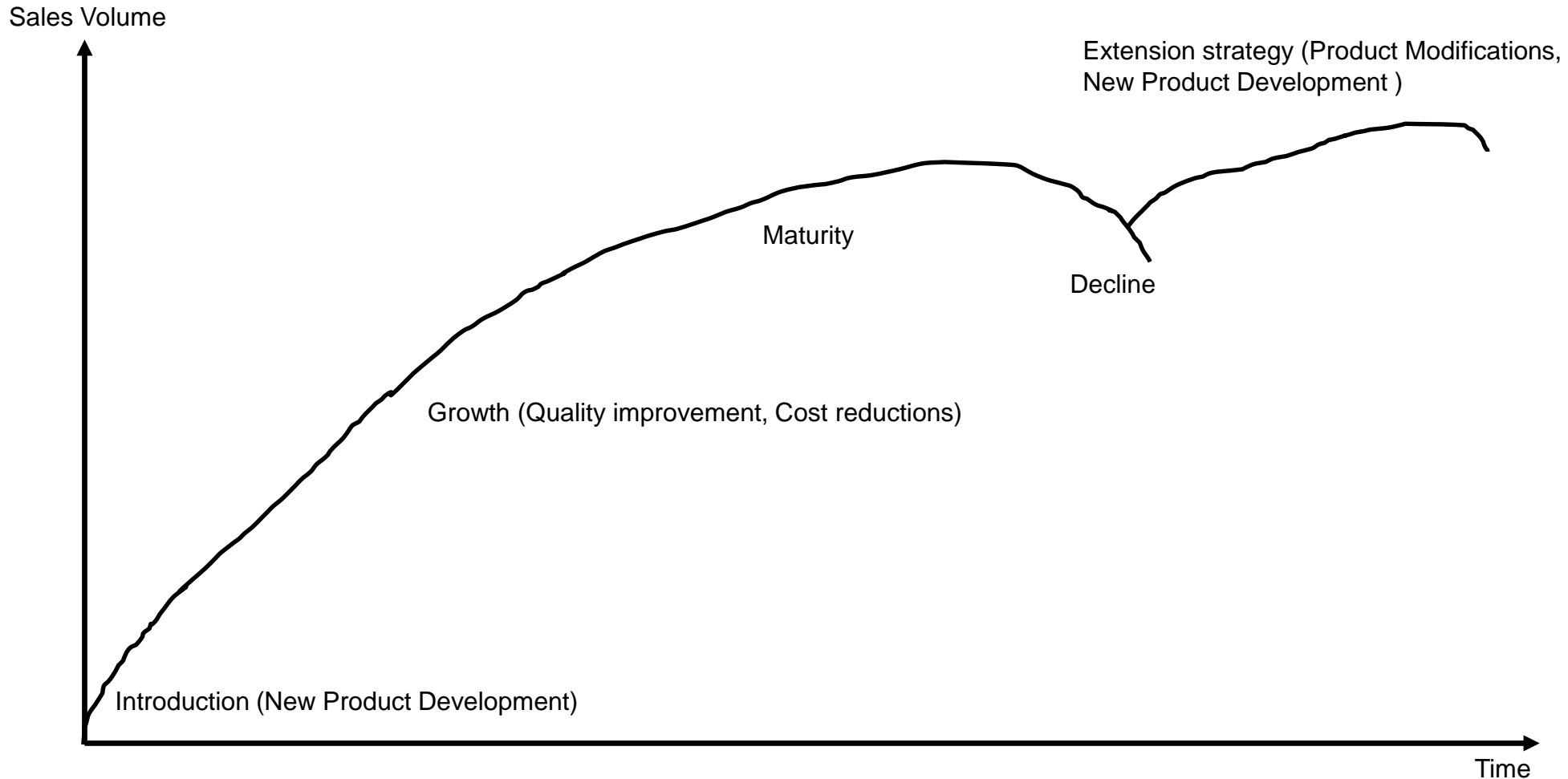
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# Key challenges in involving suppliers in a complex multi-project customer organization

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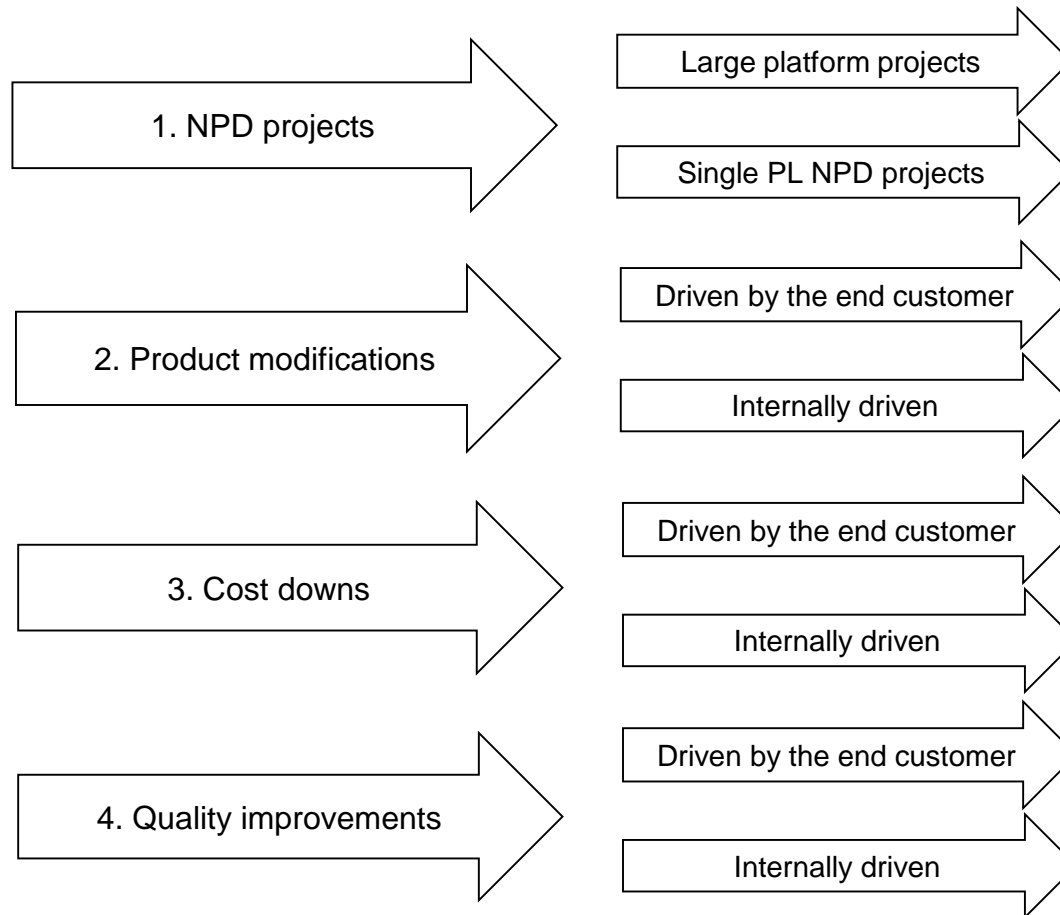
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# Throughout product life cycle different project types are initiated in order to maximize profitability



# Product line PLXX multi-project environment

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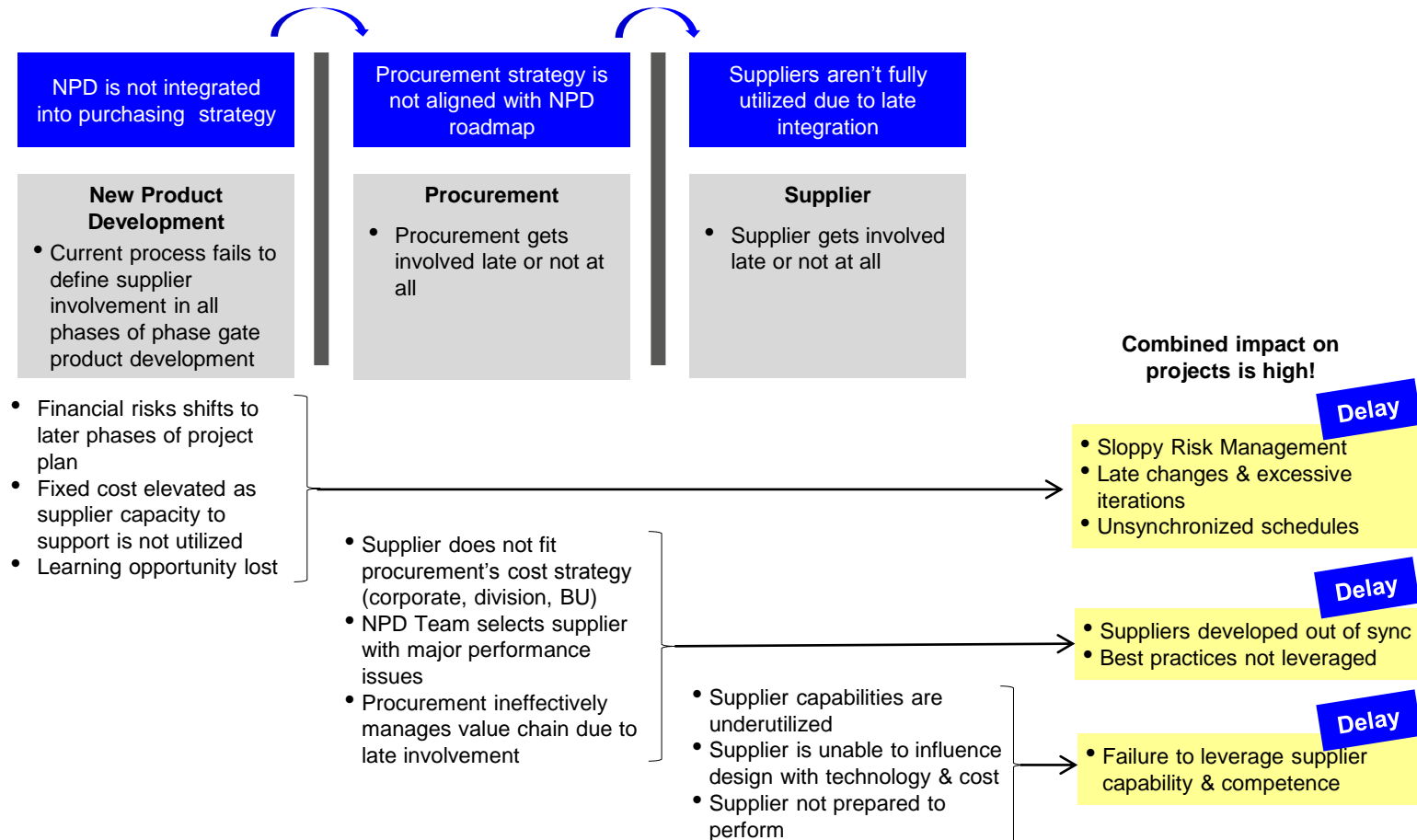
# Project – supplier project matrix shows the complexity of relationship

Segment/Division BU		PL xx							
		NPD1	NPD 2	PMI 1	PMI 2	CD 1	CD 2	CD 3	QI 1
C a s t i n g s	Supplier 1	✖		✖		✖		✖	
	Supplier 2		✖			✖			
	Supplier 3								
	Supplier 4		✖						
	Supplier 5								
	Supplier 6				✖				✖
P l a s t i c s	Supplier 1								
	Supplier 2		✖			✖			✖
	Supplier 3								
	Supplier 4						✖		
	Supplier 5								
	Supplier 6	✖		✖					

NPD = new product development  
PMI = product modifications  
CD = cost downs

NPD = new product development  
 PMI = product modifications  
 CD = cost downs  
 QI = quality improvements

# Lack of alignment between purchasing strategies and project roadmap lead to poor suppliers' utilization and project delays



# Key challenges in involving suppliers in a complex multi-project customer organization

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# Not all suppliers belong to one generic category

Supplier type	Core capability	Symbol	Comment
Production supplier	“Make to print” (produce as per design).	PS	Traditional supplier with volume capacity
Tool maker	Design and manufacture tools to order/product design	TM	Can have capability for low volume production
Full service supplier	Design, prototype, tooling, test and product manufacturing	FSS	FSS comes from automotive “tier 1” concept – also “strategic partner”
Engineering design house	Engineering design plus CAE/CFD analysis	ED	Sometimes they have CAE/CFD in-house
CAE/CFD consultant	Advanced engineering analysis	CAE	Can also do other types of engineering analysis
Prototype house	Make prototypes as per product design	PH	Differentiate between rapid prototyping and soft tooling
Production and tool maker	Manufacture tools and product	PTS	Typically can also do soft tools
Test house	Can do lab testing	LT	They may have some engineering design capability
Full engineering service supplier	Design, CAE/CFD, prototype and test	FESS	Expensive and rare to find good ones!

# Assessment of supplier capabilities will comprise of assessments by purchasing and by the project organization: two different views on the same supplier are complementary yet compromising

Purchasing view

KPI	2013	2014	2015	2016
Spend (MDKK)	205	199	196	190
DP Direct Impact (MDKK)	3,5 (ex. PS)	7,6	11,9	13,3
DP Direct Impact (%)	2,6 % (ex. PS)	3,7%	5%	6%
Number of suppliers	349	330*	200*	60*
Number of suppliers for 80% spend	36	34	28	22
CCC-Sourcing (%)	15%	16%	18%	20%
Payment terms in days	86,5	82	85	88
OTD	#NA	#NA	#NA	#NA
PPM	#NA	#NA	#NA	#NA

Project view

Supplier xx	Importance	Points			Score
		Total	Possible	Percentage	
Design Capability	4.0	3.5	5.0	70%	70%
Prototyping Capability	2.0	2.0	5.0	40%	40%
Project Competency	4.0	2.8	5.0	55%	55%
Collaboration capability	4.0	4.2	5.0	83%	83%
Quality management	4.0	3.9	5.0	77%	77%
Technology Roadmap	3.0	3.0	5.0	60%	60%

# Four possible outcomes for supplier status come from supplier capability assessment to supply parts & be a project support partner

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Manufacturing capability preferred	Project support capability preferred	1. Preferred partner for current production and for NPD – best choice (“full service supplier”)
Manufacturing capability phase out	Project support capability preferred	2. Supplier on a phase out but preferred to support NPD – conflict of interest
Manufacturing capability preferred	Project support capability phase out	3. Preferred partner for production however not fit as an NPD partner – can we have an alternative NPD partner?
Manufacturing capability phase out	Project support capability phase out	4. Clear cut decision – phase out and delete from DSL

# Key challenges in involving suppliers in a complex multi-project customer organization

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# Project vision

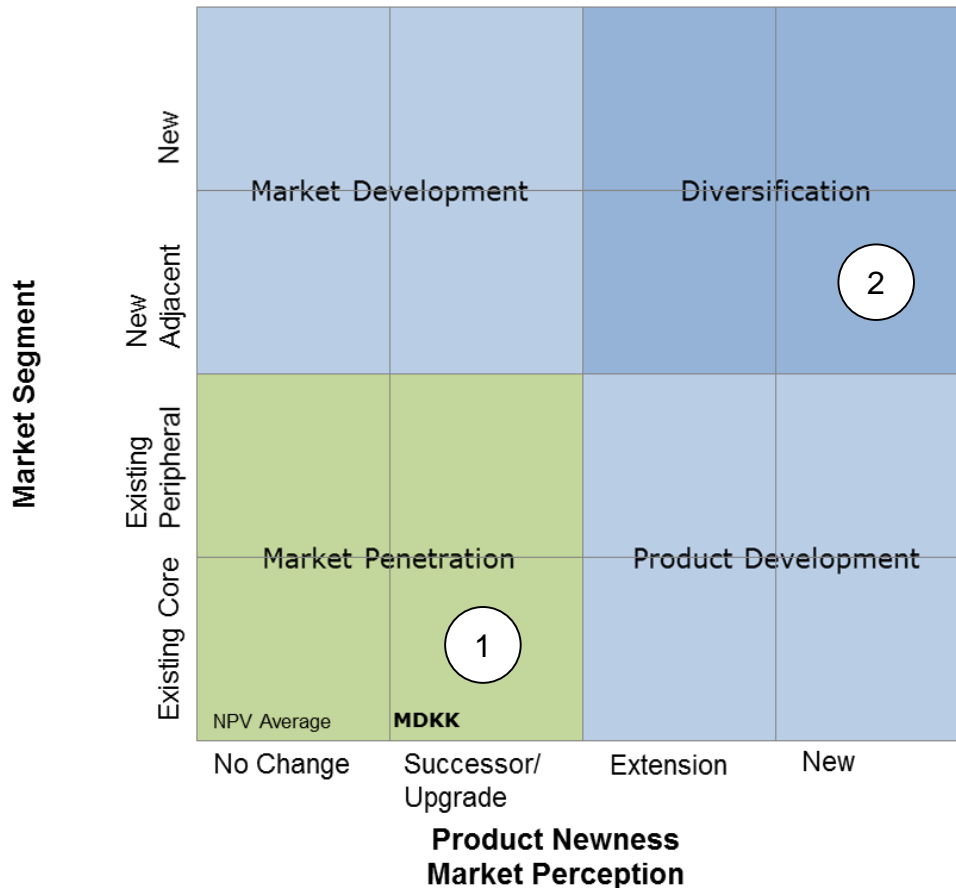
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Target Group	Customer Needs	Solution	Value for Client
<ul style="list-style-type: none"><li>▪ Which market segment does the product target</li><li>▪ Which applications is the product intended to serve</li><li>▪ Who are the target users and customers</li></ul>	<ul style="list-style-type: none"><li>▪ How does the product create value for customers</li><li>• Which benefits will it provide</li><li>▪ What emotions should it evoke</li></ul>	<ul style="list-style-type: none"><li>▪ What will it roughly look like – consists of</li><li>▪ What are the constraints if any</li><li>▪ What is the cost frame</li></ul>	<ul style="list-style-type: none"><li>▪ How is the product going to benefit the company</li><li>▪ What are the business goals</li><li>▪ What are the business priorities</li></ul>

# Project type & vision determines the role of suppliers and the type of supplier required

## Ansoff Matrix



Project 1 – minor product modifications, keep or increase market share on known territory, high volume potential, cost competitive competition

- High quality high volume manufacturing supplier
- Deliver on time
- Minor design changes, little development effort
- Cost competitive

Project 2 – new product with some new technology, new market development, exploratory, lower volumes at the beginning, competition not so well known

- Ability to apply new technology quickly
- Strong development cooperation with suppliers
- Time to market important but not critical
- Complex customer relationship - exploratory

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# Project governance model

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## Project Committee - PC

**Chairman**

**Members**

**Process Owner**

### **Mission:**

- **Secure project fulfilment – overall and on each project (incl. scope)**

### **Role:**

- **Decisions on deviations highlighted by monthly reports**
- **Decisions at gate reviews**
- **Support the project managers – on ad hoc basis – when required**
- **Secure project execution competencies (building) at all times**

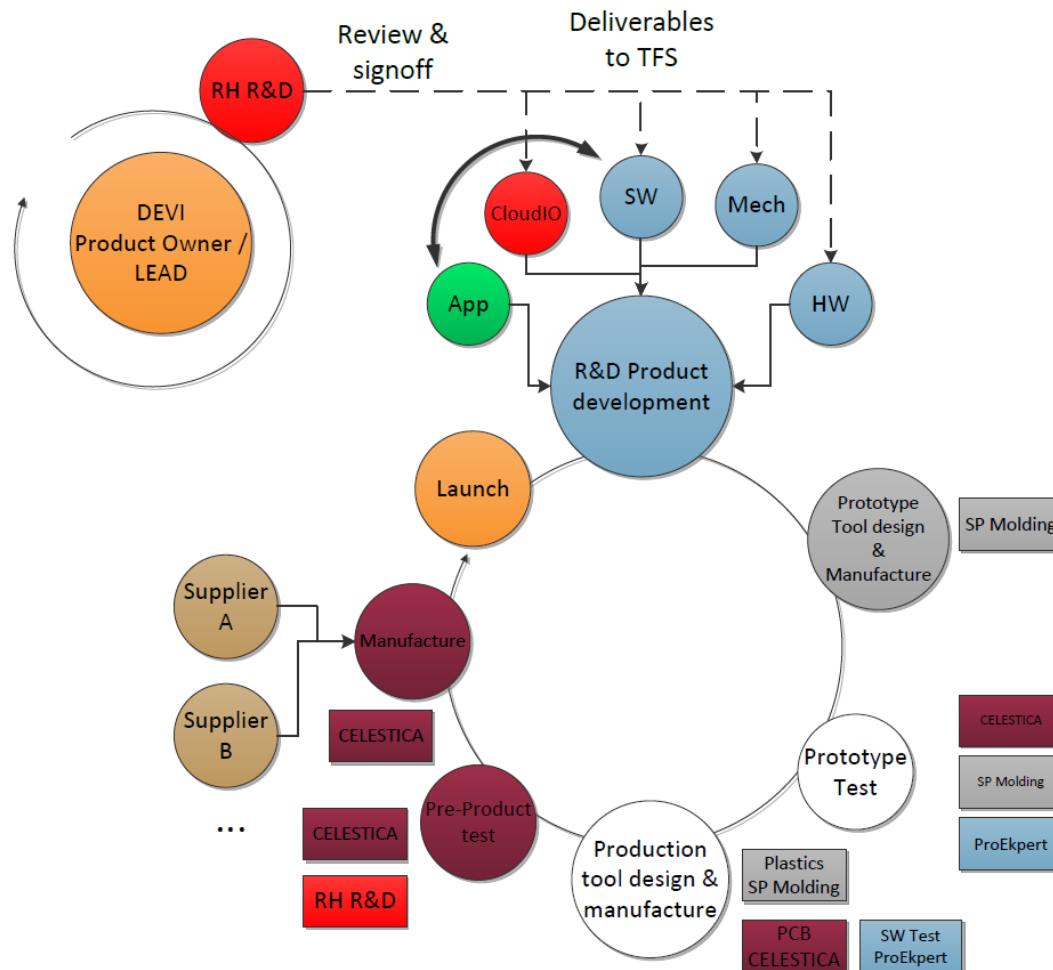
### **Responsibility:**

- **Project to meet targets or if not fulfilled escalate to PMT**

# Supplier ownership of deliverables is scalable relative to the supplier role in the project and the project set up

M0		M1		M3		M5		M6	
1	Milestone summary	1	Milestone summary	1	Milestone summary	1	Milestone summary	1	Milestone summary
2	Project Charter (Fact Pack)	12	Updated Bus. Case incl. V.C. with conf. targets	34	Updated Business Case including V.C. estimate	34	Updated Business Case including V.C.	34	Updated Business Case
3	Defined Milestone deliverables (This document)	13	Time schedule	13	Updated Time schedule	13	Updated Time schedule	55	Project evaluation report
4	Business case update (Fact Pack)	14	Preliminary CAPEX release plan	35	Updated CAPEX release plan	15	Updated Risk assessment and mitigation actions		
5	Resource contract (Fact Pack)	15	Risk assessment and mitigation actions	15	Updated Risk assessment and mitigation actions	5	Updated Resource contract		
		16	Quality targets	5	Updated Resource contract	47	Q-release		
		5	Updated Resource contract	36	Export limitation control	37	Transfer responsibility to line		
		17	Environmental assessment	37	Plan for transfer responsibility to line				
				17	Environmental assessment				
6	Technology assessment	18	Concept IP FTO	20	Preliminary Product Specification	48	Approvals, certifications & conformity declarations	20	Updated Product specification
		19	IP protection goal	38	DFMEA	20	Product Specification		
		20	Product Requirement Specification	18	IP FTO update	38	Updated DFMEA		
		21	SFMEA	39	Design documentation	18	IP FTO final		
		22	Product Concept	23	Product design review	19	IP protection final		
		6	Technology assessment	24	Product Test Plan & documentation	23	Product review		
		23	Product concept review			24	Product Test Plan & documentation		
		24	Product Test Plan			49	MQ test plan		
7	Supply Chain strategy	25	Supply Chain Concept	40	Supply Chain design	50	Sample Certificate Approval	56	Variable cost evaluated against target
		26	Critical suppliers selected	41	PFMEA	41	Updated PFMEA	57	Market quality report
		27	Supply Chain concept review	27	Supply Chain design review	51	Production equipment validated	58	Evaluation of supply chain ramp up performance
		28	Supply Chain technology assessment	42	Ramp up plan including capacity and capability	27	Supply Chain review		
				43	Supplier evaluation, approval and agreement	42	Update ramp up plan		
						52	Control Plans (Production)		
						53	H+S assessment		
8	Initial Value Proposition (Fact Pack)	29	Functional Value Proposition	29	Updated Value Proposition	54	Value Selling package	59	Launch tracking report
9	Customer insight (Fact Pack)	20	Customer Requirement Specification	44	Global Launch Plan	44	Updated Global Launch Plan		
10	Competitor Insight (Fact Pack)	30	Launch Goals & strategy	45	Local Launch Plans	45	Updated Local Launch Plans		
11	Application overview (Fact Pack)	31	Updated target customers/Lead buyers & influencers	46	Pricing structure	33	Launch review		
		32	Product positioning	33	Launch review				
		33	Launch review						

# Example of a complex project set up – what needs to be considered in order to ensure success in involving suppliers in the project



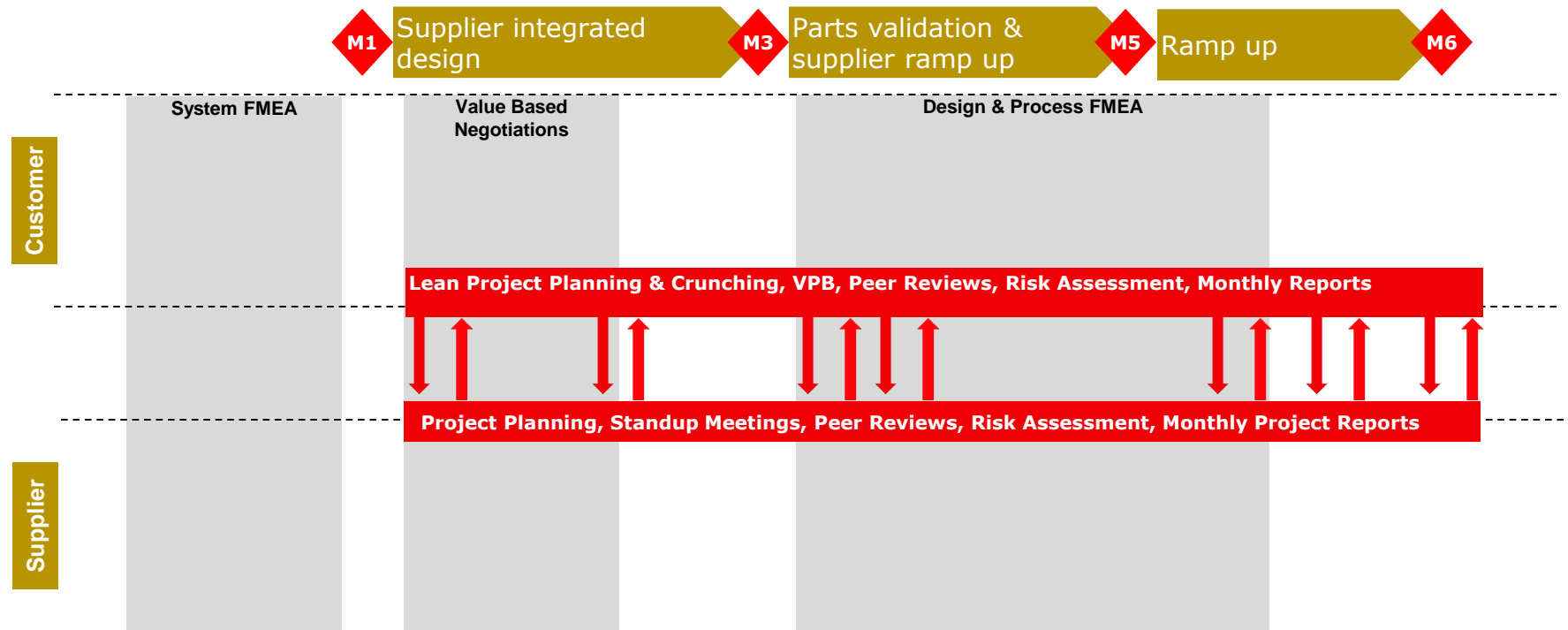
1. Reporting structure
2. Communication plan
3. Deliverables' responsibility
4. Geographical footprint of suppliers

# Key challenges in involving suppliers in a complex multi-project customer organization

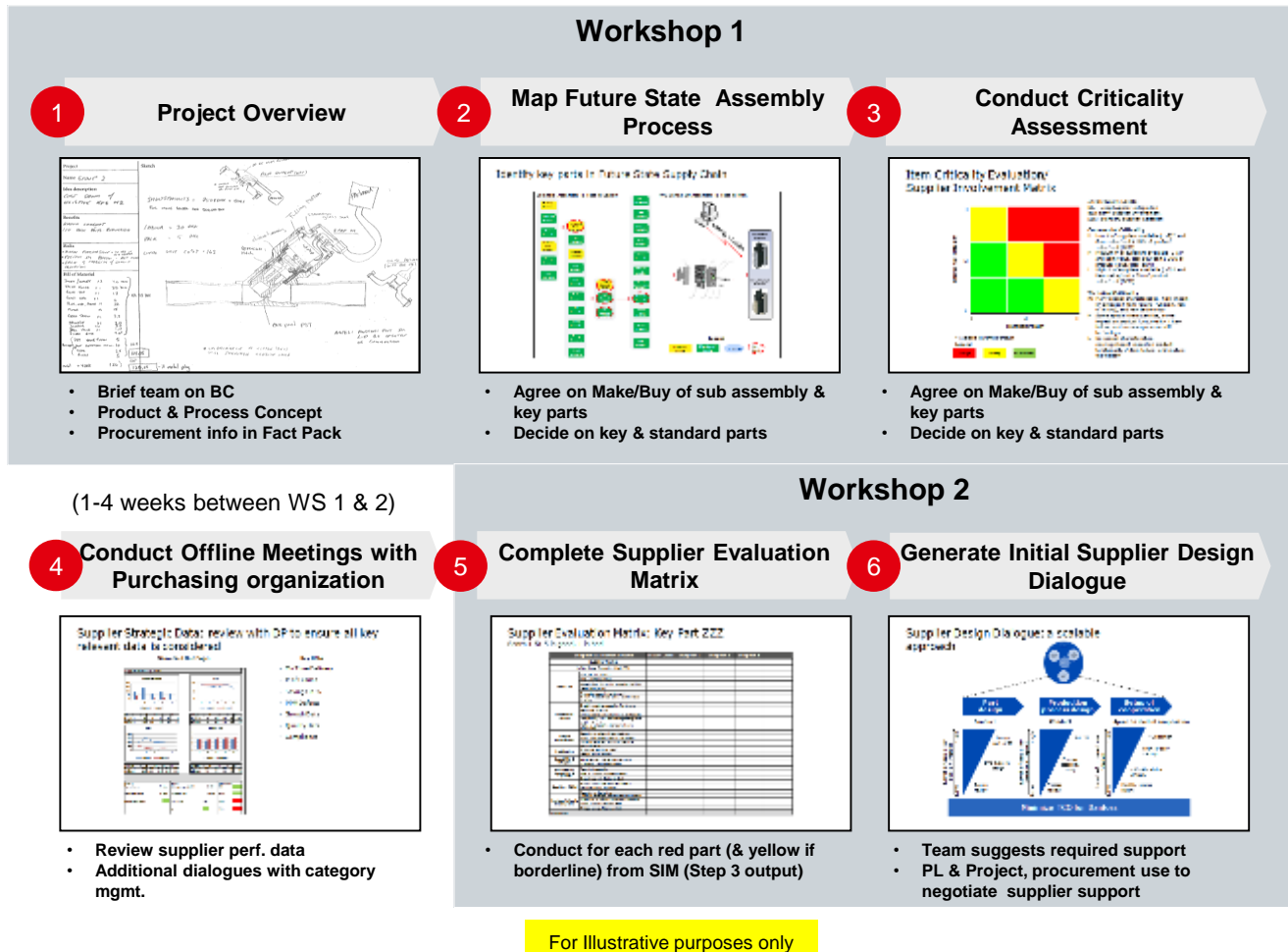
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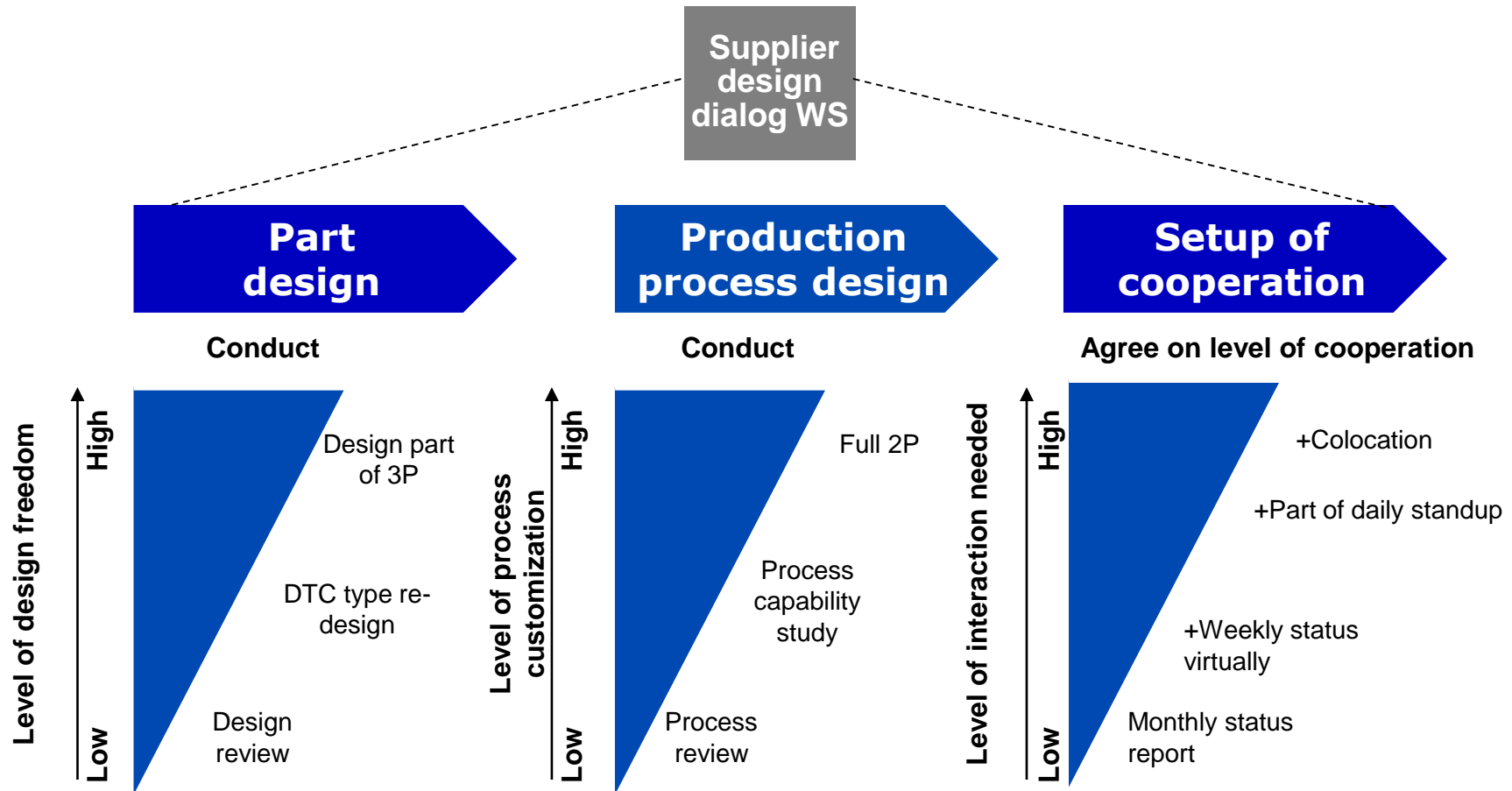
# Suppliers should be involved in projects as early as possible; this is often not the case



# Sourcing Strategy Workshop Overview



# Supplier Design Dialogue: a scalable approach



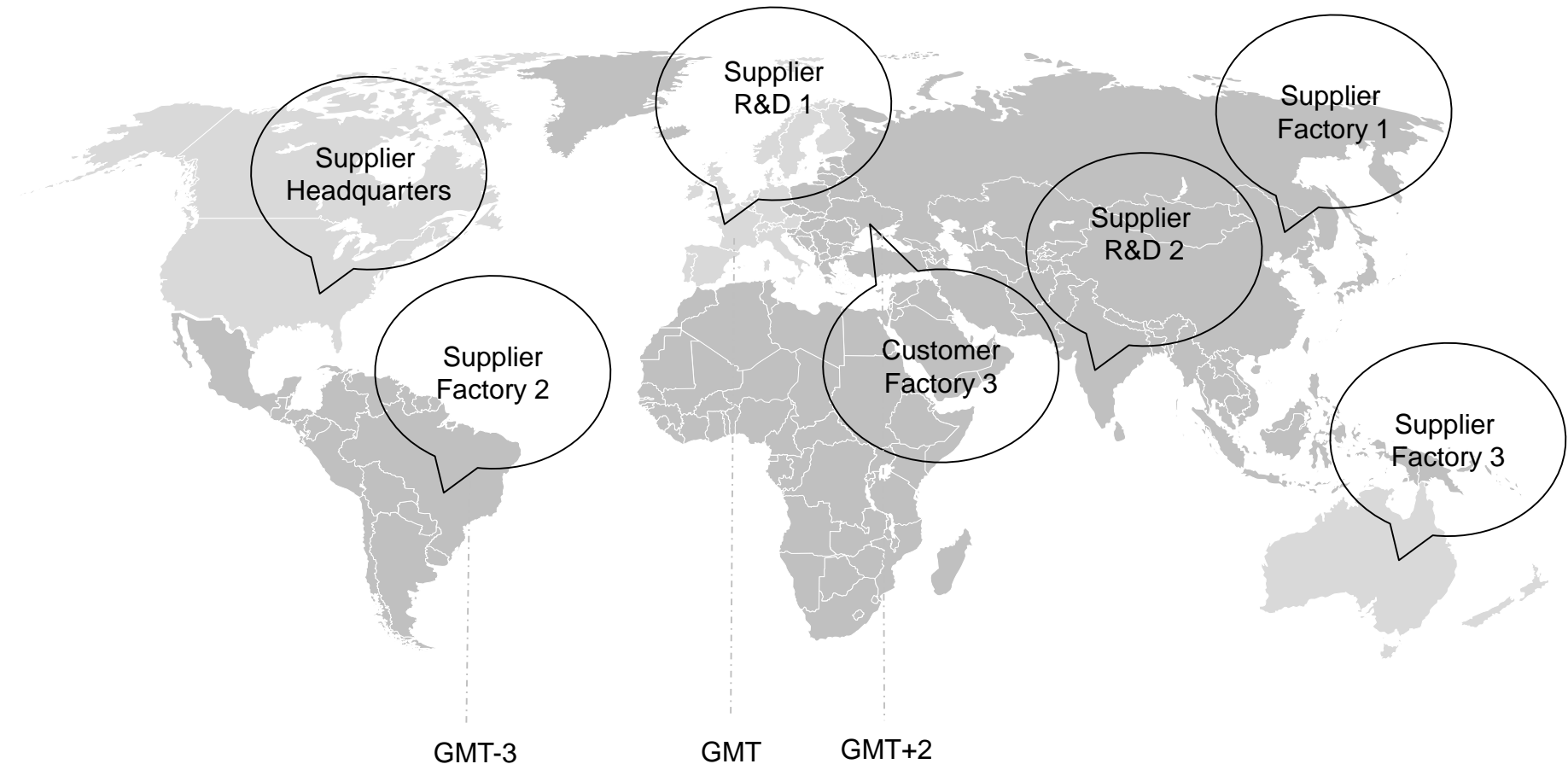
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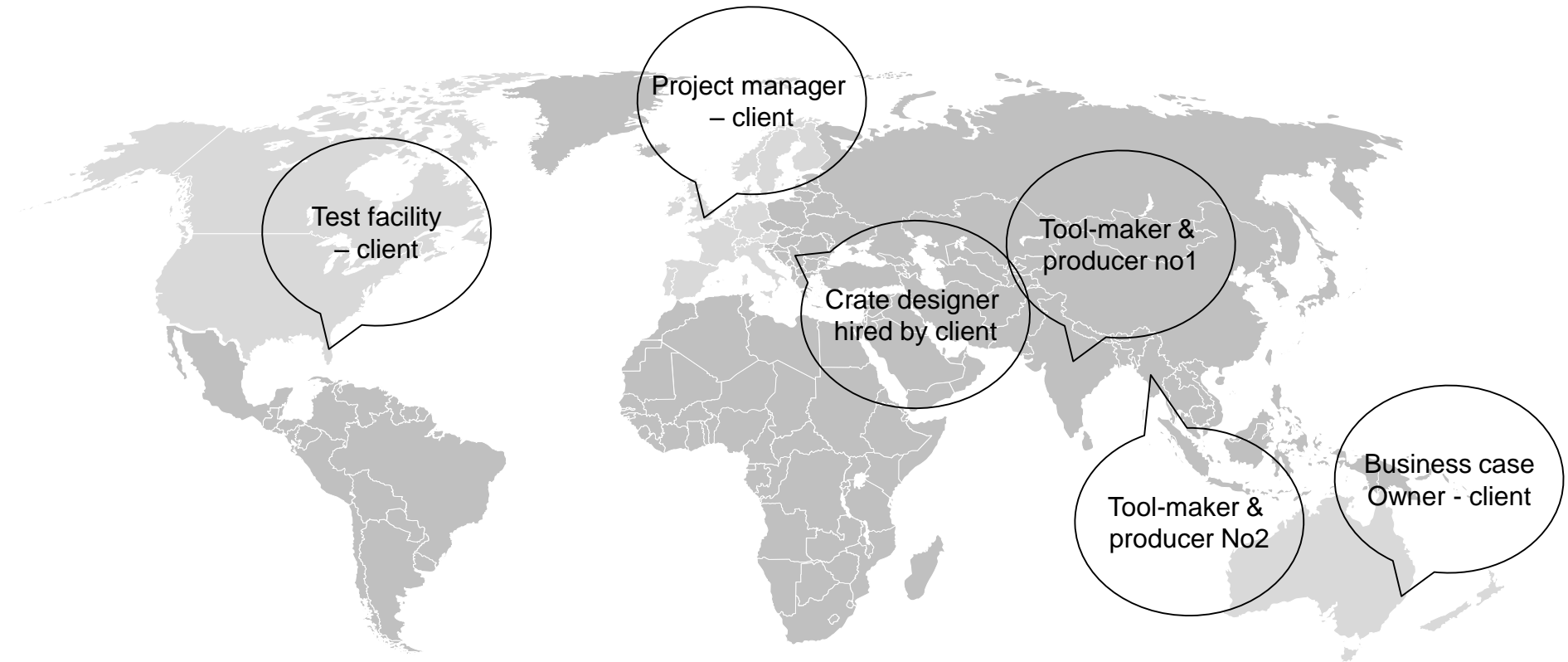
# Supplier XX has global footprint and supports a global customer

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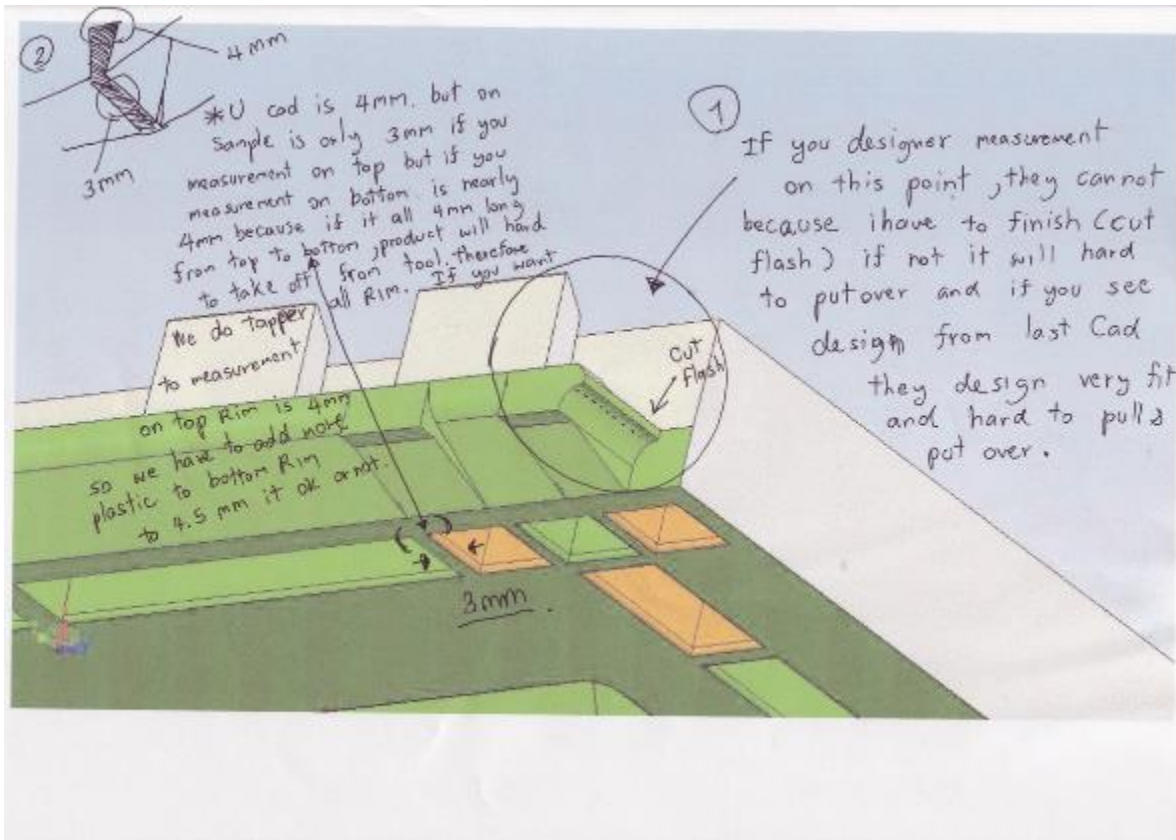


# Example Automotive crate development project - CHEP

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# Thai crate tool maker communication example demonstrates the point that each project has specific requirements relative to suppliers' geography and cultures

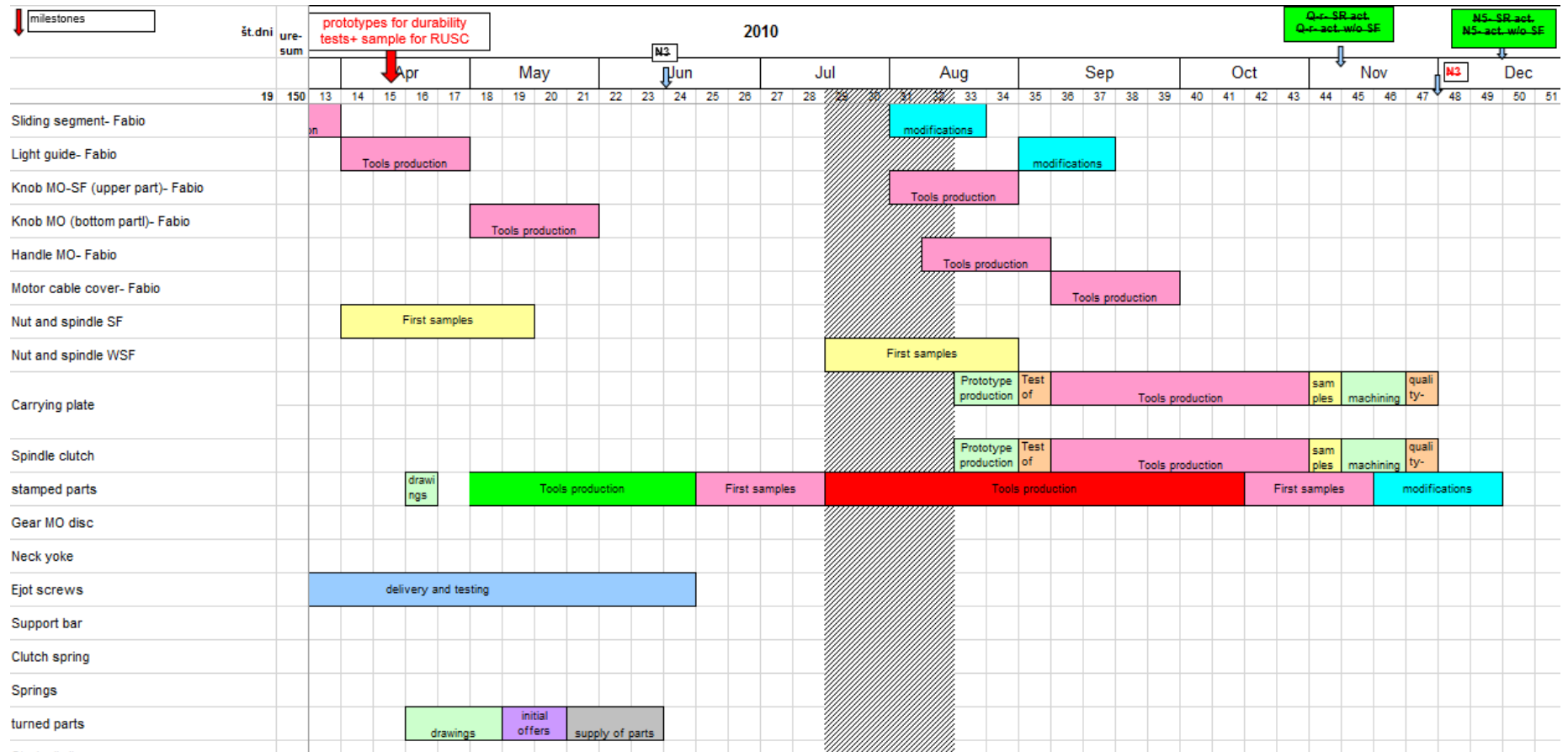


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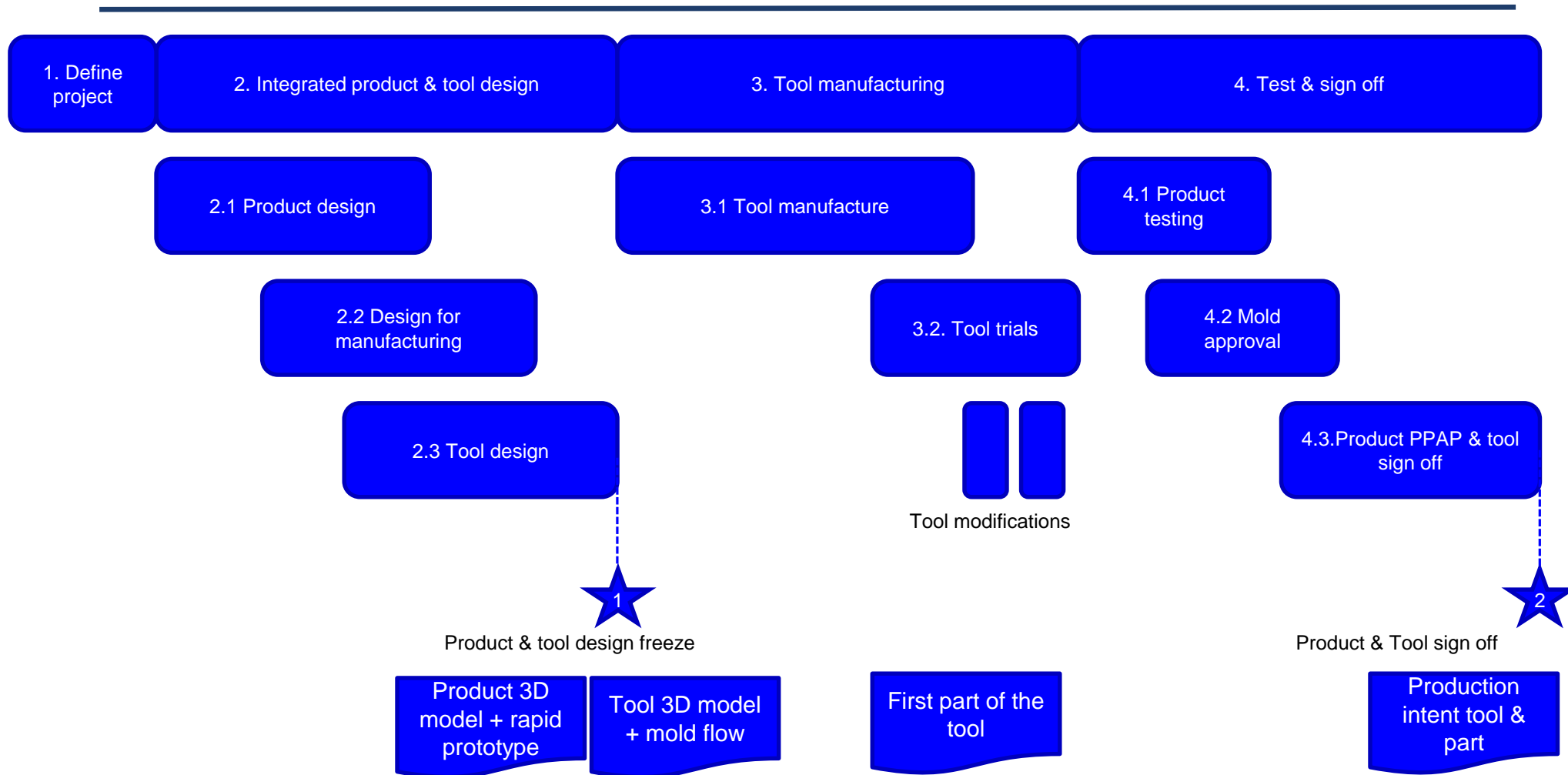
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# High level project plan includes supplier' activities; however it does not give enough detail about the supplier activities to warrant the execution of these activities on time

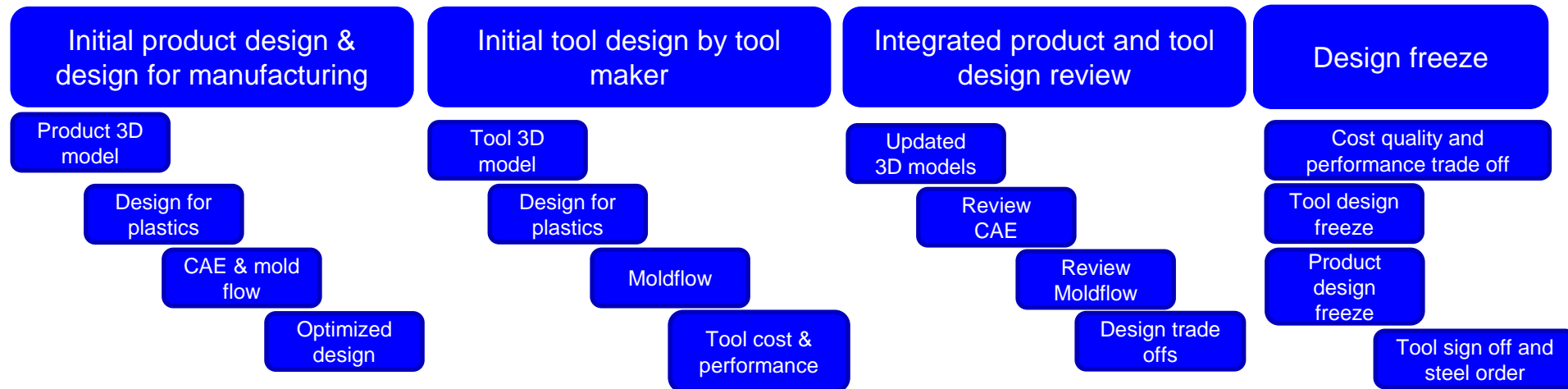


# Example: plastic tool making project - how detailed breakdown of supplier activities is sufficient to warrant their effective involvement in the customer project?



# Integrated product & tool design phase in more detail

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# Best practise: What to consider when setting up supplier involvement in projects?

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- ▶ Geography (travel, language, culture, time zones, visas, work permits).
- ▶ Software compatibility (especially for CAD/CAE/CFD).
- ▶ Software licence (valid or pirate).
- ▶ File transfer capability (size of files, reliability).
- ▶ Frequency and type of design reviews (where, when & how).
- ▶ Certification (ISO 9000, TS....)
- ▶ Equipment calibration (for testing – despite being certified!)
- ▶ TS tools capability (FMEAs, control plans, SPC).
- ▶ Problem solving ability.
- ▶ Problem solving ability.
- ▶ Best practises (for CAE – meshing quality standards, elements' type, boundary conditions, solver type, etc.).
- ▶ Lead time (prototype tooling, any kind of engineering analysis).
- ▶ Quality/ability of report writing.
- ▶ Documentation capability (design/drawing updates etc.).
- ▶ Stakeholder mapping (PL, lead engineer etc., commercial/legal representative).
- ▶ Contractual obligations (type of contract)
- ▶ Availability of capacity (prototype shop, lab etc.)
- ▶ IP wrights (who own them?)

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# What can we do to address common mistakes in involving suppliers in projects?

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- ▶ Supplier selection process must include **specific** requirements from suppliers as partners in that project
  - Supplier must be sub-categorized according to its relevant capabilities to support certain project types
- ▶ Invisible boundary between the project team and the supplier must be destroyed
  - Communication lines with the supplier must be clear from project start. Purchasing must not be the middle between the engineers otherwise the message will be lost in translation.
- ▶ Early sourcing strategy leads to making early sourcing decisions and helps integrate suppliers from the very beginning of the project

## What are your thoughts?



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PROJEKTNO VODENJE V PRAKSI

Multi-projektno okolje

22. marec 2018 - Ljubljana, Radisson Blu Plaza Hotel

