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Integrated Project Deliveries in Finland



We would like to present you

- ❑ Why and how the Finnish public owners are working together to develop IPD-models for the Finnish construction market
- ❑ How LCI-Finland supports Lean Construction development in the Finland
- ❑ Some results Finnish Road Administration (FTA) have achieved in their first Project alliances



Some History...

Research project of the Project Alliance 2007/2008, no piloting

LCI comes to Finland 2008

- Lean principles, Integrated project deliveries and Lean Construction tools and methods started to achieve understanding

LIPS in Karlsruhe Germany 2009, Jim Ross introduced the Project Alliance

- EU-legislation challenge in the public sector

LIPS in Washington DC 2010

- We might be able to challenge the EU-legislation

LIPPI in Brisbane Australia 2011

- First Project Alliance has been established, several others coming

LIPS in Tampere Finland 2012

- We have four alliance projects

LIPS in Nottingham 2013

- We have six alliance projects and some hybrids, more coming
- LCI-Finland has 4,5 M€ R&D project 2013-2015

LIPS in Berkeley 2014

- We have 16 alliance projects including some hybrids, much more coming
- LCI-Finland has 4,5 M€ R&D project 2013-2015

The Finns chose Project Alliancing to be the IPD model and wanted to implement it to the Finnish market,

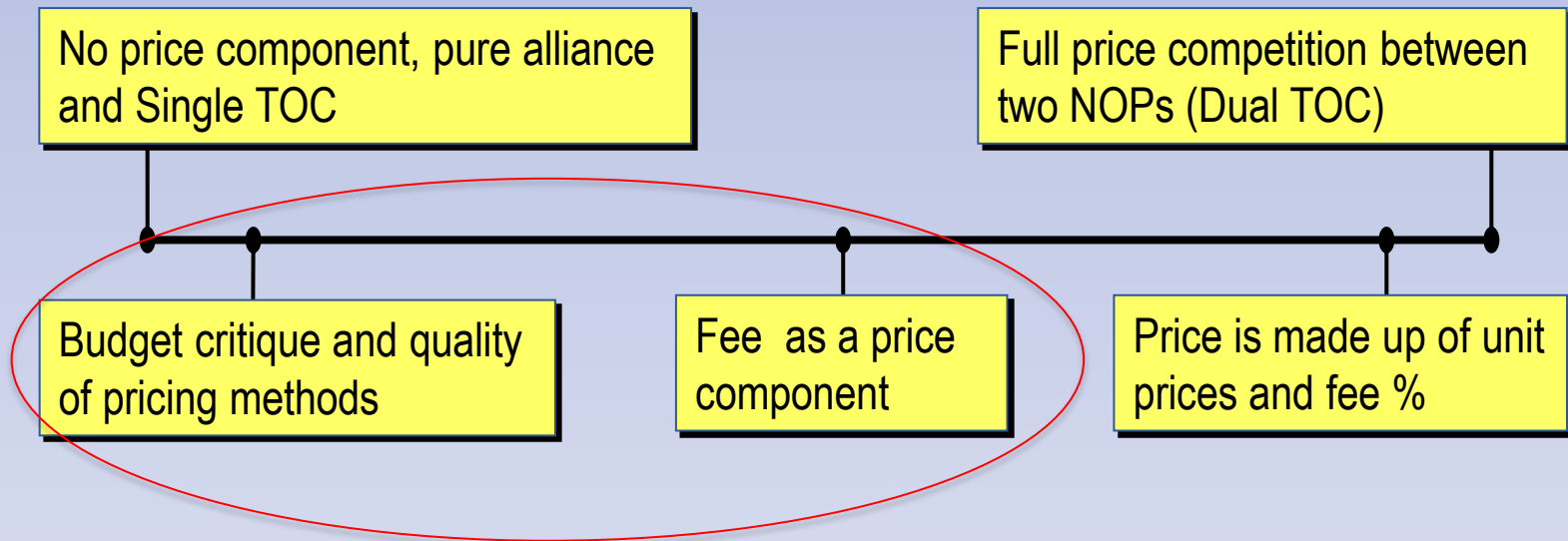
but

The Alliance contracting model in Australia has two aspects, which are not in line with European Union legislation:

- **There is no need to use price in comparison**
- **There is no need to write out verbal comparison about every comparison criteria**



We need price component in EU



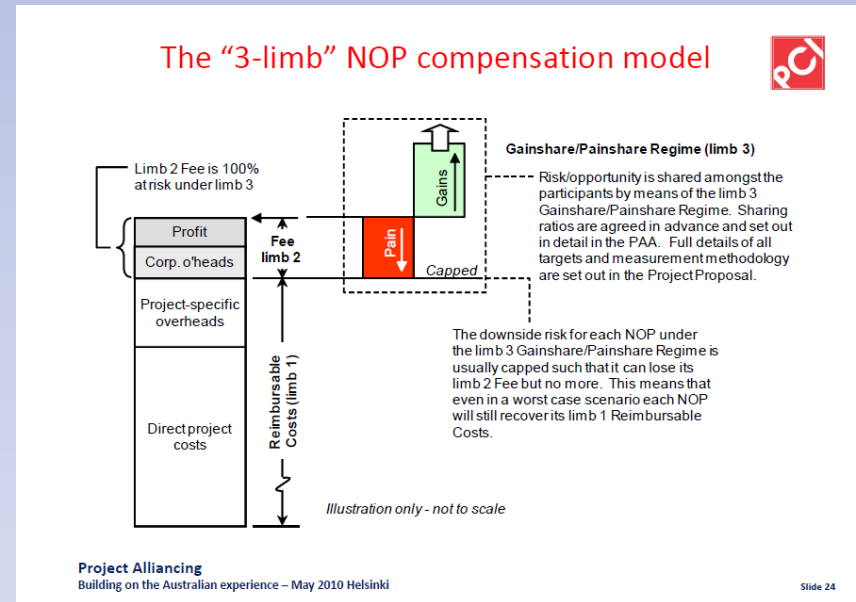
Alliancing versus European union procurement legislation

According to the EU directives and Finnish legislation

–The price should be used, when contracting authority is making comparison of tenders

- Two possible selection criteria: The lowest price or the most economically advantageous tender (so-called quality and price)
- In our case, we are going to use limb 2 as a price element.

–Contracting entities should write out justifications for every comparison criteria



The European commission rejected claim against using Alliance Model September 2013

Group project 2013-2016

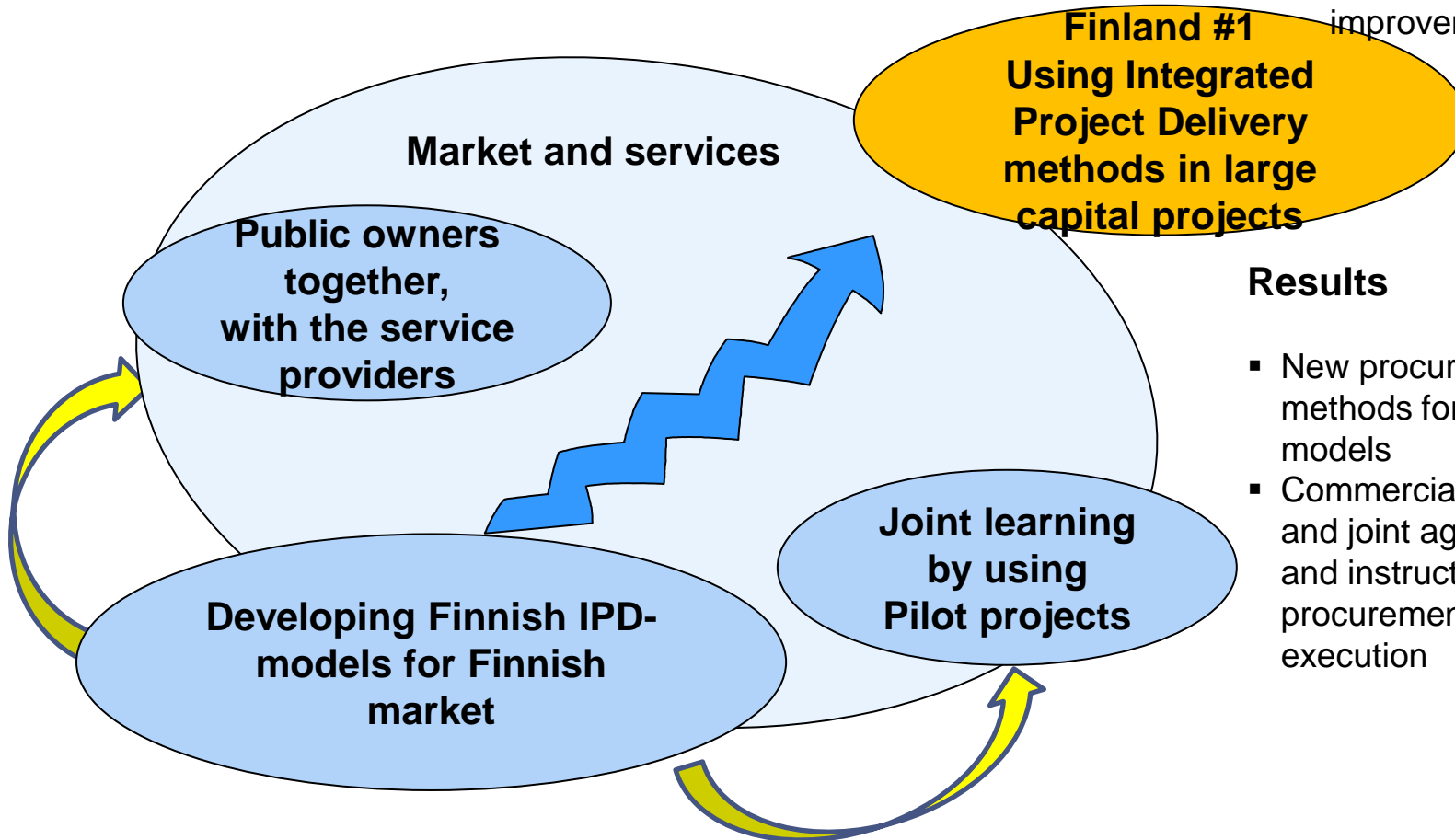
Integrated Project Delivery for Finnish Public Owners

- ✓ 11 public organizations
- ✓ Key Question: How the Finnish public owners will develop and manage the new way to delivery projects using IPD models?

Mission

Consequences

- Better end user satisfaction
- Developing the culture within the industry
- Productivity improvement



Results

- New procurement methods for IPD-models
- Commercial models and joint agreements and instructions for procurement and execution

1) From sub optimization to optimize the whole with new rules

- **Early integration**
- **More innovations**
- **Shared goals, risks and opportunities**
- **Joint agreement with the key organizations and commercial model which support cooperation**
- **Sustainability and flexibility**

2) Improve collaboration between public owners

- A. **Developing procurement methods and documents**
- B. **Cooperation in project level**

3) Developing knowledge, management, leadership and decision making

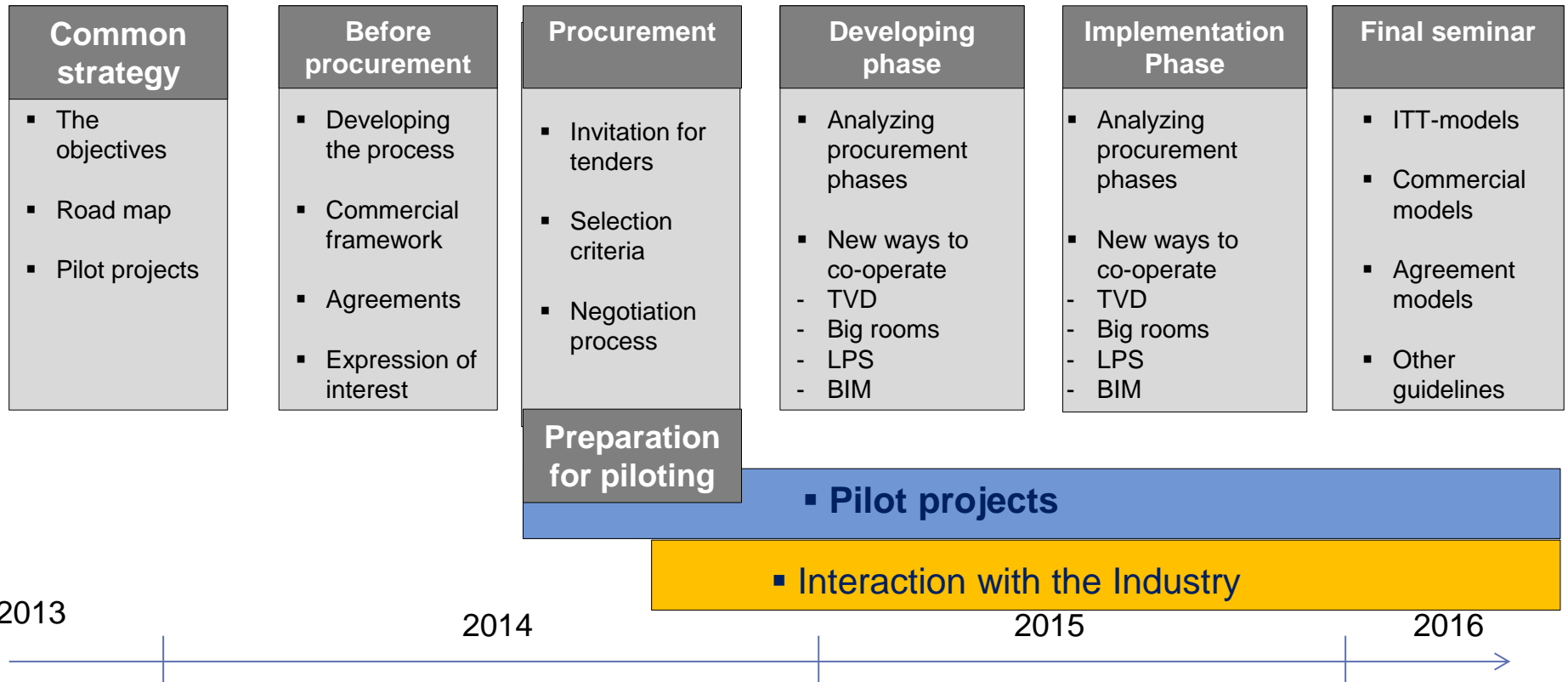
- **Knowledge and culture**
- **Project management and interaction**
- **Decision making in new project developing methods**

Phases of the Project

Strategy

Procurement

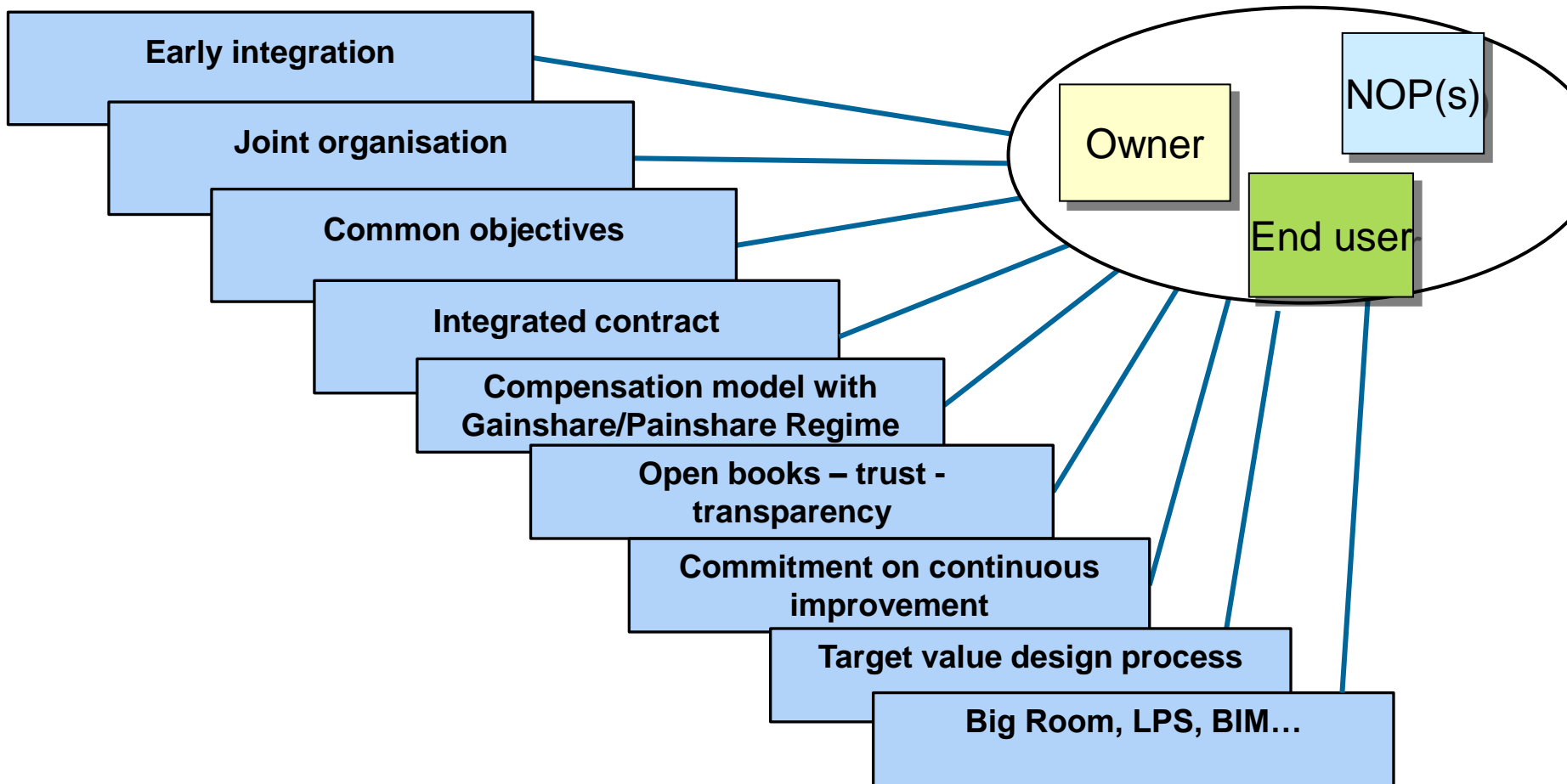
Implementation



Some examples of the key issues



Elements of Project IPD



Integrated Project Delivery

People, Process, Technology

Measurable
value

Production
management

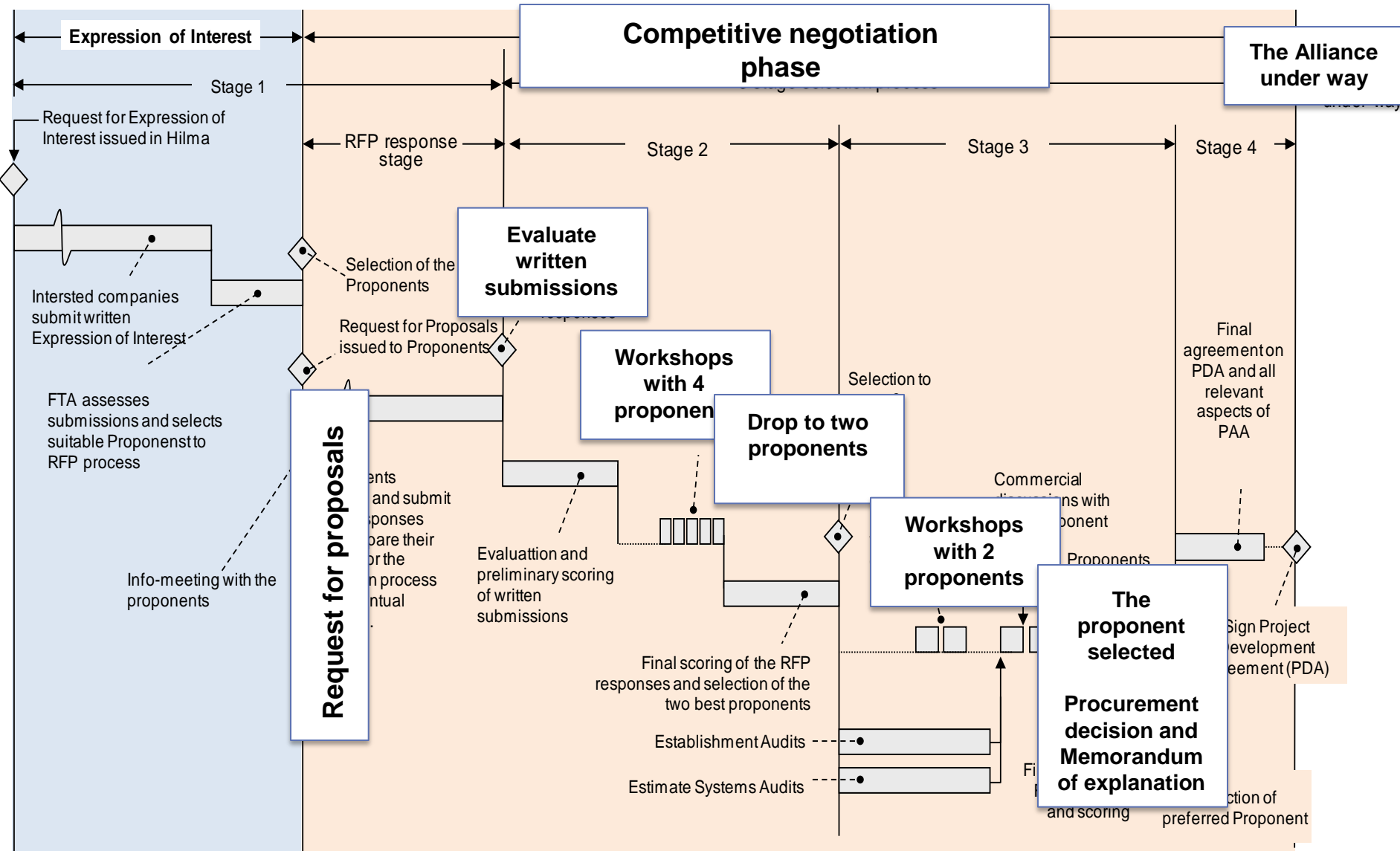
Collaboration
Co-location

Simulation
Visualization



Agreement / Commercial Framework

Establish the alliance, IPD-teams/ selecting the NOPs



Selection criteria example

Evaluation criterion		Weight			
		Stage2		Stage3	
		total	sub	total	sub
A.	Capability	100 %		75 %	
A1.	Project implementation plan and organsation	25 %		10 %	
	A1.1 Project implementation plan and organisation		25,00 %		10,00 %
A2.	Track Record	35 %		10 %	
	A2.1 Track record in Key Result Areas		25,00 %		10,00 %
	A2.2 Learning from mistakes		10,00 %		no evaluation
A3.	Value for Money	40 %		30 %	
	A3.1 Setting the target outturn cost		25,00 %		15,00 %
	A3.2 The budget critique		15,00 %		15,00 %
A4.	Alliance ability and leadership	0 %		25 %	
	A5.1 Alliance understanding and demonstrated leadership capabilities		no evaluation		25,00 %
B	Price			25 %	
B1	Fee %		no evaluation		25,00 %
	A+B Total	100,00 %		100,00 %	

How the owner cooperate?

We do cooperating with

- the unions of service providers
- service providers directly
- other public procurement units (cities, government units ect.)
- private sectors developers (we don't want only know what public sector do, because we can learn more)
- Using IPD projects (gives a new opportunities to cooperate and increase common understanding with designers and constructions)

Targets of the discussions

- Give market information
- owner seeks feedback from
 - contracting models
 - schedules
 - previous assignments
- Open dialogue
 - ensures the procurement process
 - helps to avoid misunderstandings and complaints about the processes
- Cooperation is done
 - nationally and internationally
 - in suitable forums
 - by using expert networks and personal networks

Participants

- University Hospital of Oulu, pilot projects
- Kainuu Hospital, pilot project 120 M€
- University of Helsinki, pilot project 20 M€
- Real Estate Department of Helsinki
- Real Estate Department of Espoo, pilot project school 40 M€
- Real Estate Department of Tampere & Infra Tampere
- Real Estate Department of Turku, pilot project school 24 M€
- Real Estate Department of Oulu, pilot project school
- Gasum ltd
- Finavia ltd
- The Finnish Transportation Agency, pilot project Highway 6, 90 M€



Organizers:

- RAKLI (the Finnish Association of Building Owners and Construction Clients)
- Vison Alliance Partners Ltd

IPD-projects in Finland

Hanke	2010				2011				2012				2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1 Lielähti-Kokemäki radan peruskorjaus																				
2 Vuolukiventie 1b:n peruskorjaus																				
3 Tampereen Rantatunneli																				
4 Helsinki-Vantaan liikennealueiden päällystystyöt ⁽¹⁾																				
5 Terveyden ja hyvinvoinnin laitos ⁽²⁾																				
6 Järvenpään sosiaali- ja terveystalo																				
7 Franzenian peruskorjaus ⁽³⁾																				
8 Lahden matkakeskus																				
9 Pakilan alueurakka																				
10 As. Oy Helsingin Retkeilijänkatu 3-7 ⁽⁴⁾																				
11 As. Oy Gunillankallio 10																				
12 Jyrkkälän lähiön julkisivuperuskorjaus																				
13 Naantalın voimalaitoksen allianssiurakka ⁽⁵⁾																				
14 Helsingin yliopiston hallintorakennuksen peruskorjaus																				
15 Kainuun keskussairaalan peruskorjaus ja laajennus																				
16 VT 6 peruskorjaus																				

Strategiavaihe

Muodostamisvaihe

Kehitysvaihe

Toteutusvaihe

Takuu ja ylläpito

* Integroitu palveluhankinta, ** partnering-malli, *** KVR-allianssi, **** rakentaminen allianssimallilla. Kaavio osittain viitteellinen.

Lean construction Institute Finland - LCIFIN

✓ Founded August 2008

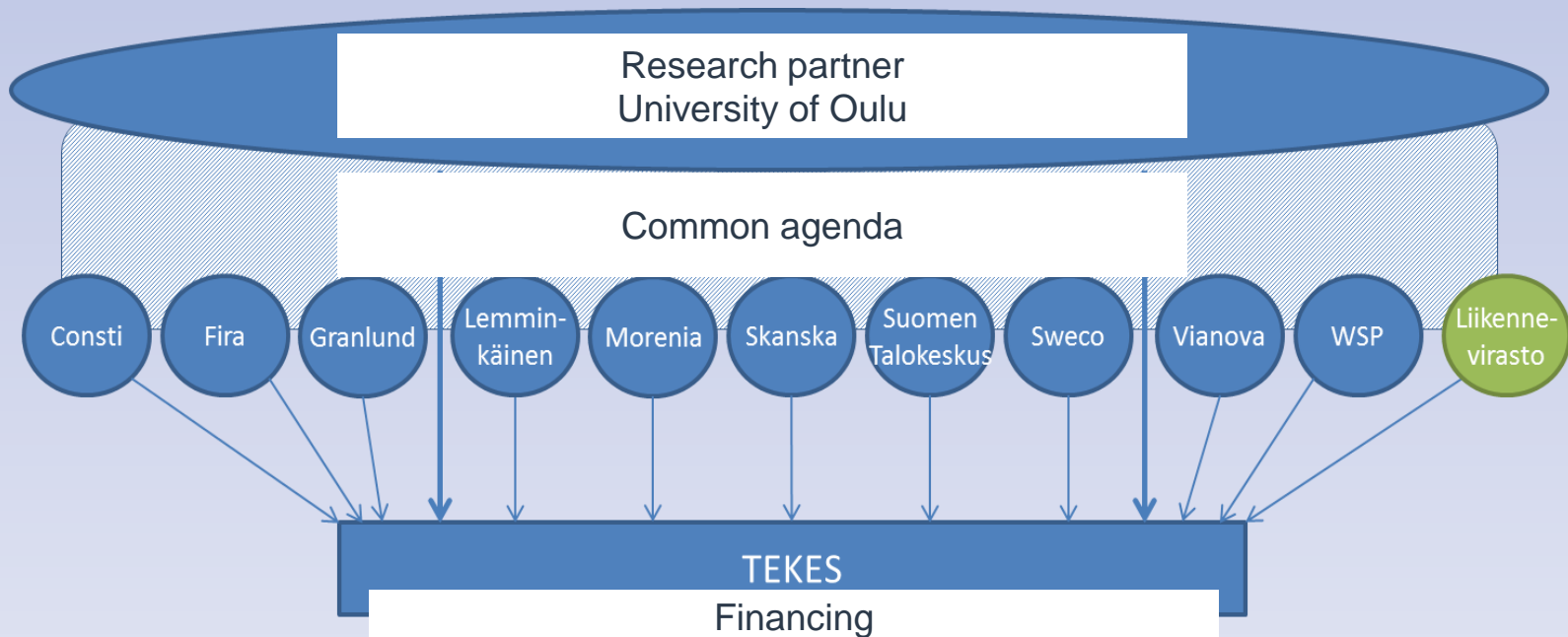
Founder members:

- ✓ LCI-USA,
- ✓ RAKLI – The Finnish Association of Building Owners and Construction Clients,
- ✓ RT – Confederation of Finnish Construction Industries,
- ✓ University of Oulu



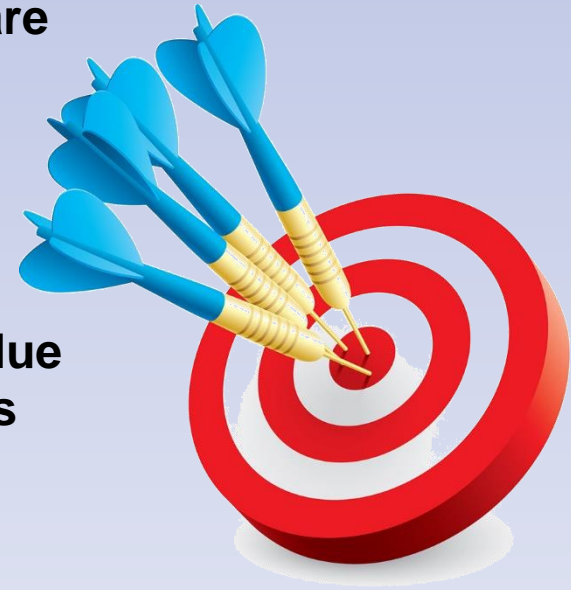
LCIFIN2 Research Project

- ✓ 12 organizations
- ✓ Financing 4,5 M€
- ✓ Duration 2013-2015

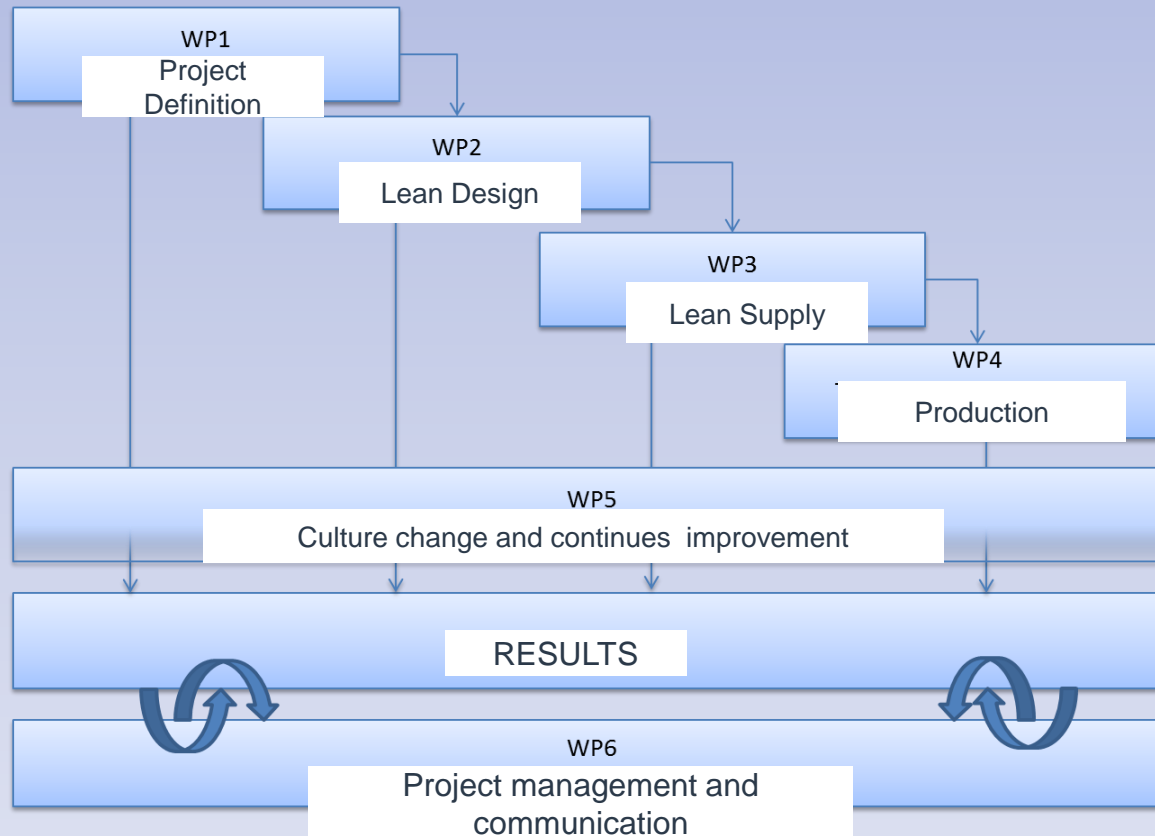


Why LCIFIN2?

- We believe that Lean and lean construction are powerful philosophies and give us theoretical and practical platform to develop the whole industry
- Lean construction – Understanding and Improving Project Based Production → yes!
- We need forums where we can study together and share common understanding and lessons learnt
- Brings academy and industry closer to each other
- The participants organizations represent the whole value chain. We can across the borders in joint R&D projects
- $1+1 > 2$



LCIFIN2 – Work Packages



LCIFIN2 – How do we work?

✓ Every organization has their own pilot projects

✓ Half day theme workshops every month

✓ Excursions in Finland and abroad

✓ LCIFIN Annual Conference

Work package	Theme	time	Organizer
Project definition	Integrated project deliveries	4.3.2013 at 12	FIRA
Lean design	BIM ja LEAN I	9.4.2013 at 12	Vianova
Production	Reliable production (LPS, takt time)	29.4.2013 at 12	Consti
Lean Supply	Lean Construction ja Lean supply	29.5.2013 at 9	Morenia
Project definition	Requirements drives the whole construction process	19.6.2013 at 9	Sweco
Production	Value stream mapping	28.8.2013 at 9	Suomen Talokeskus
Lean design	BIM ja Lean II	25.9.2013 at 12	WSP
Lean design	Target Value Design	30.10.2013 at 9	Granlund
Lean design	Working in the integrated project team, Big room	2.12.2013 at 8	Lemminkäinen
Production	Prefabrication, standardizing	9.1.2014 at 9	Skanska



Results

University of Oulu

- **WP1 Project definition 100%**
 - 1 PHD-study
 - 4 journal articles
 - 1 report+ 2 powerpoint presentations
- **WP2 Lean design 70%**
 - 3 journal articles
 - 2 powerpoints
- **WP3 Lean Supply 25%**
 - 1 journal article
- **WP4 Production 10%**
 - 2 powerpoint presentations
- **WP5 Culture, continues improvement 50%**
 - 1 journal article
 - 0.9 PHD-study

- **PHD-studies**
 - **Aapaoja: Enhancing value creation of construction projects through early stakeholder involvement and integration**
 - **Pekuri: The role of business management in construction: implications to customer value creation and satisfaction**
- **3 papers IGLC-conference**
 - **The challenges of product and process standardization in construction**
 - **Lean as a business model**
 - **Analysing the problem of procurement in construction**

15-20 master studies in the companies



LCIFIN and *Finnish Transport Agency (FTA)*

Miia Asikainen

LIPS 2014, Berkeley



We are responsible for the Finnish transport system

WE ARE an expert organisation specialising in transport and operating under the jurisdiction of the Ministry of Transport and Communications

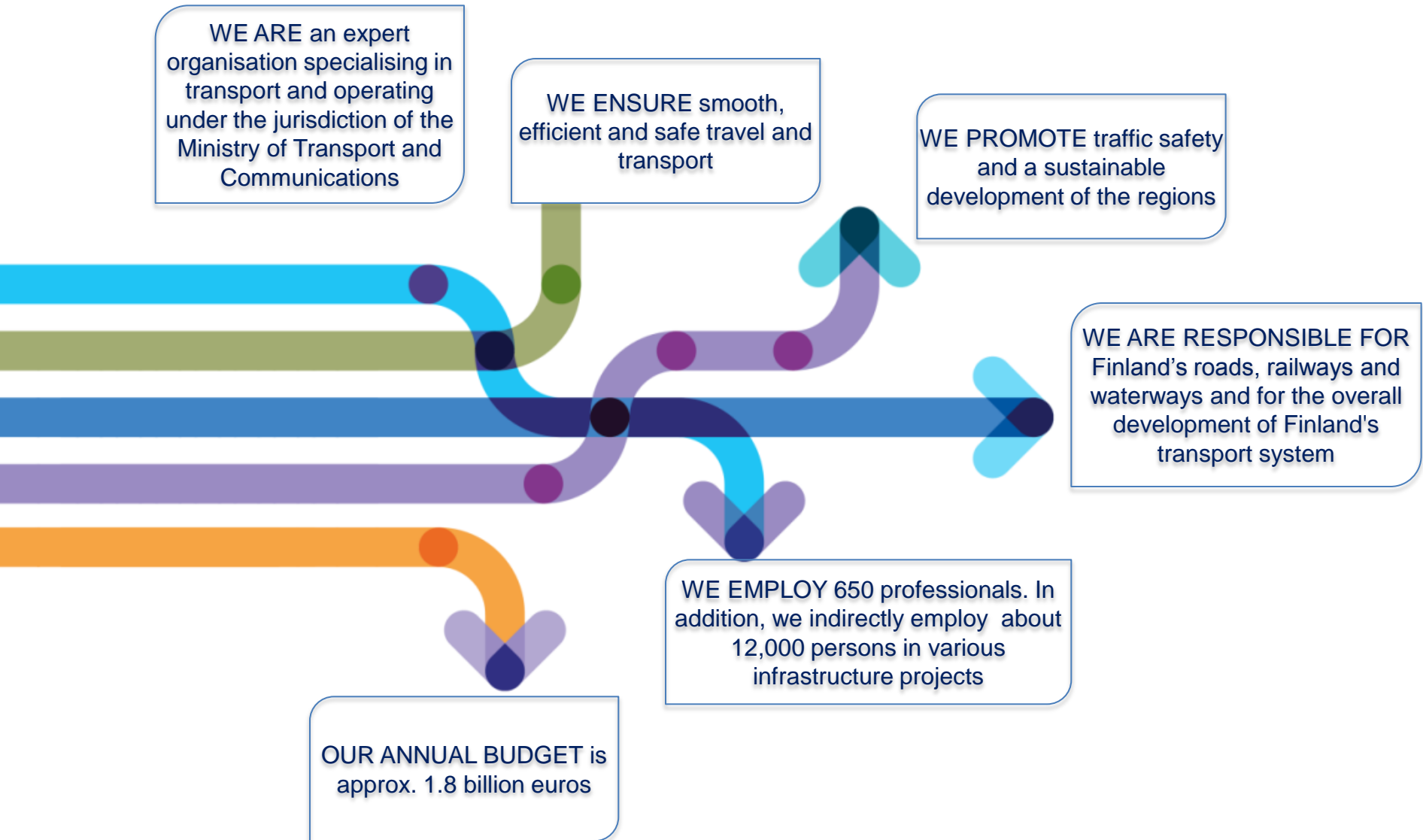
WE ENSURE smooth, efficient and safe travel and transport

WE PROMOTE traffic safety and a sustainable development of the regions

WE ARE RESPONSIBLE FOR Finland's roads, railways and waterways and for the overall development of Finland's transport system

WE EMPLOY 650 professionals. In addition, we indirectly employ about 12,000 persons in various infrastructure projects

OUR ANNUAL BUDGET is approx. 1.8 billion euros



We improve the transport infrastructure to ensure effective travel and transport chains



railway traffic

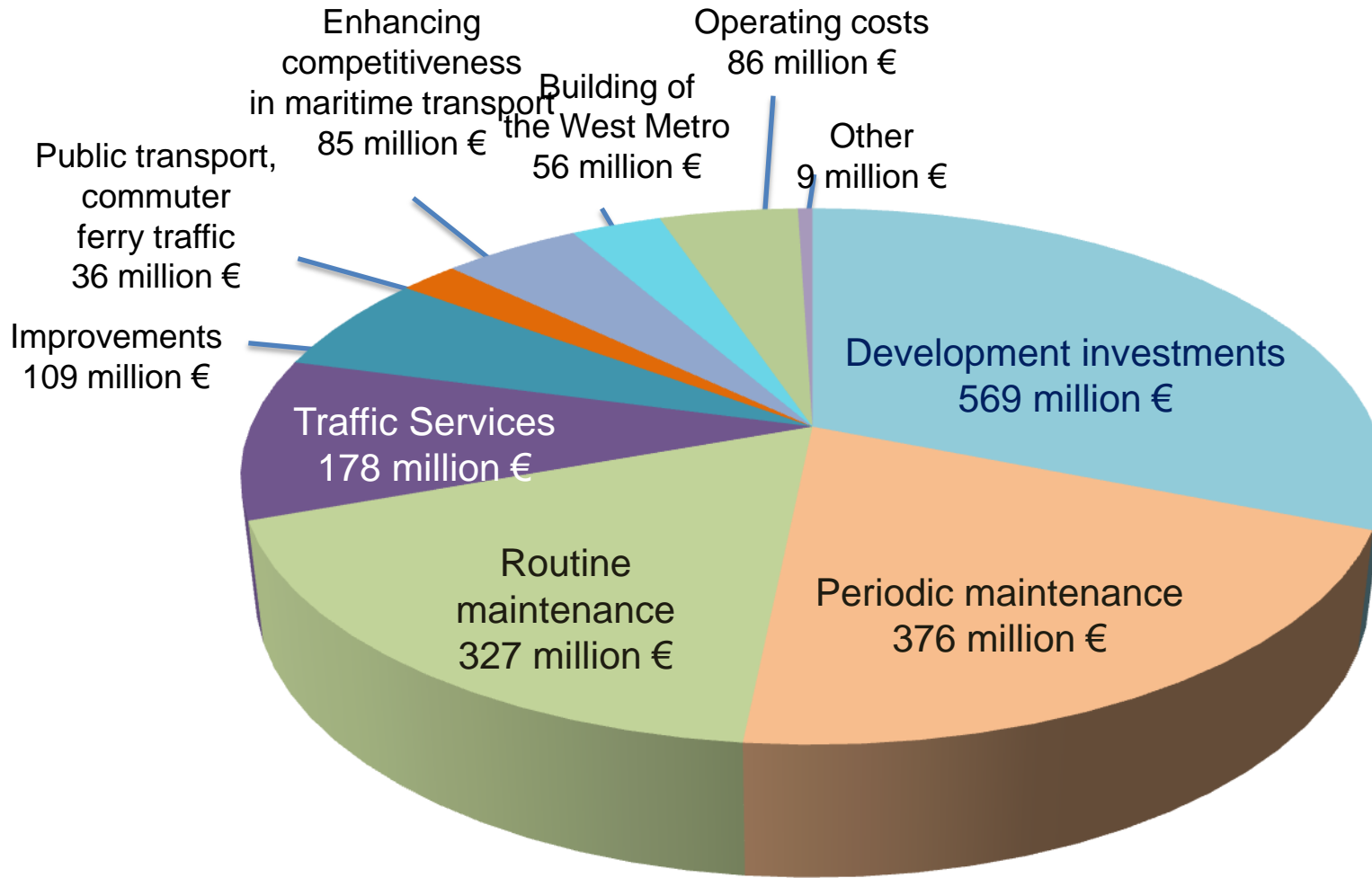


maritime traffic



road traffic

We are Finland's largest infrastructure client 2014



Of these sums, the Transport and Infrastructure responsibility area of the ELY Centres order road maintenance, planning and small investments for about 0.6 billion euros.

*Finnish Transport Agency's one of the strategic goals:
We act in a responsible, effective and innovative way*

This means:

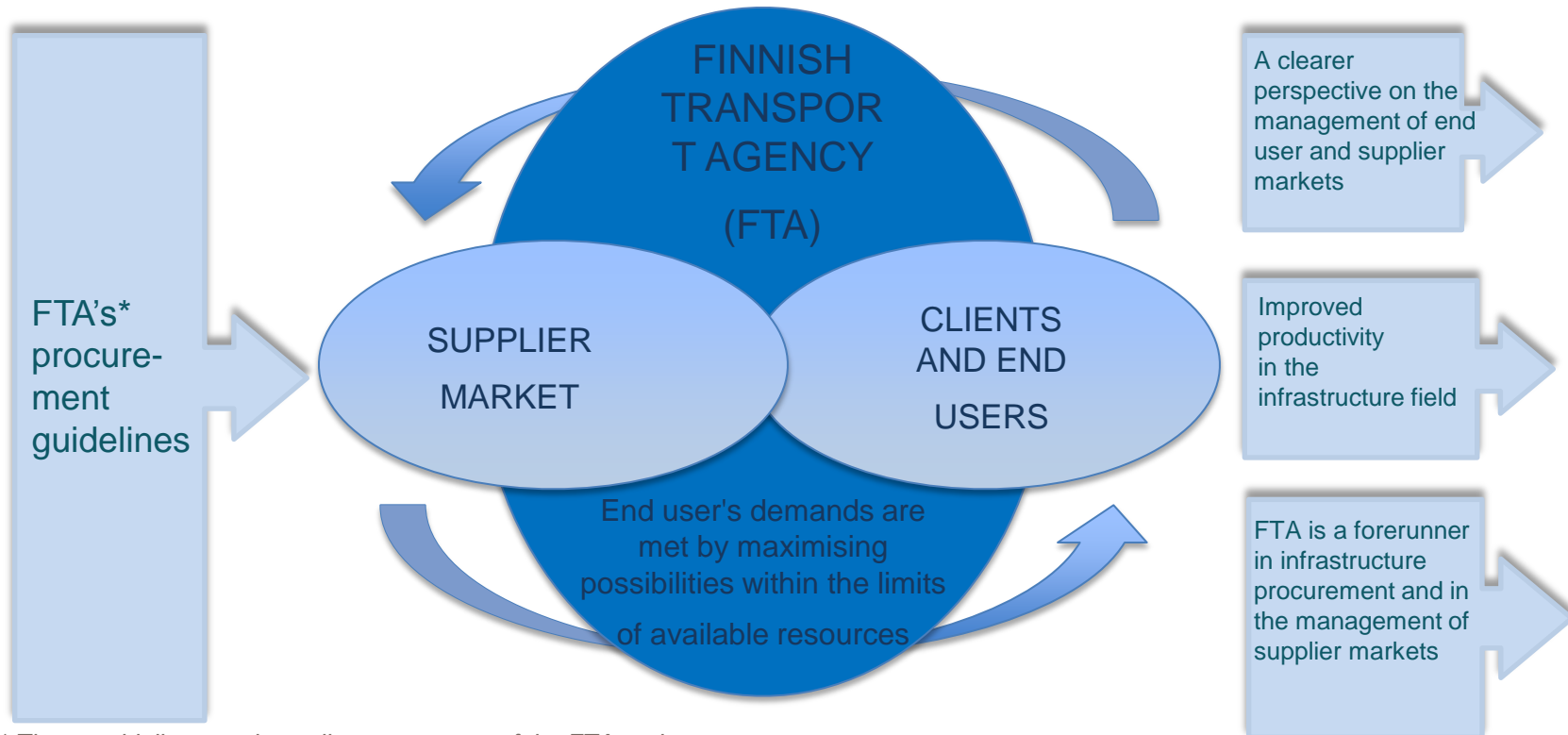
- We take initiatives to suggest new cooperation and funding arrangements
- By means of procurement we ensure effectiveness and functional cooperation in the whole supply chain
- We embrace the principles of sustainable development (materials, carbon footprint)
- We enable service providers to use new innovations and promote development
- We provide our expertise for cost estimates and planning solutions during the planning phase
- We make sure that the providers of our procured services act responsibly and ethically

FTA's procurements of services on the market

We procure the services on the market, and therefore it is of key importance to us to develop the procurement procedure.

Our goal is to achieve effective and productive procurement activities through:

- more systematic management of the whole procurement process
- uniform procurement guidelines
- cooperation with supplier markets and improved management of supplier markets



* These guidelines apply to all procurements of the FTA and to the infrastructure procurements of the Regional Centres for Economic Development, Transport and the Environment (ELY Centres)

Co-operation with far-reaching effects

Client perspective at project implementation:

- Disturbances to other traffic minimized during the construction phase
- End users' needs and demands have been taken into account in the completed project
- Zero-tolerance approach to worksite safety

Service producer's perspective at project implementation:

- Cooperation with service providers on procurement documents and on the development of new procurement methods
- Development and implementation of information models and cost control
- Ensuring know-how in the field (training, qualifications, use of procurement procedures which support skills development)

Stakeholders' views are taken into account:

- Cooperation with ELY Centres and municipalities
- Cooperation with other actors (e.g. RYM Oy, the Finnish Association of Consulting Firms SKOL, Infra ry and the Confederation of Finnish Construction Industries RT) to develop the infrastructure sector.

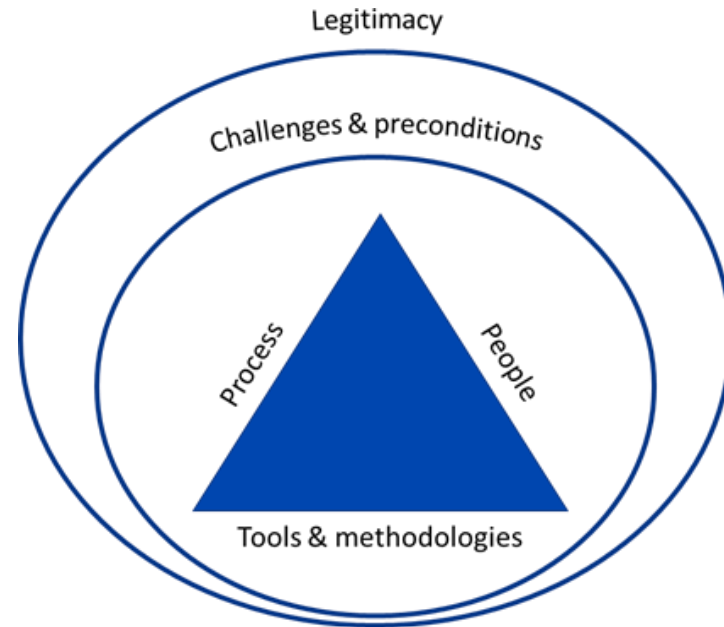


FTA and University of Oulu Development project; Integrated Project Delivery (IPD)

The aim of project is to examine what kind of challenges and cornerstones exist in the IPD:

- first in the contracting process,
- secondly in the organisation & people and
- thirdly in the tools and methods currently being executed, and to define the enablers of the successful alliance contracting process.

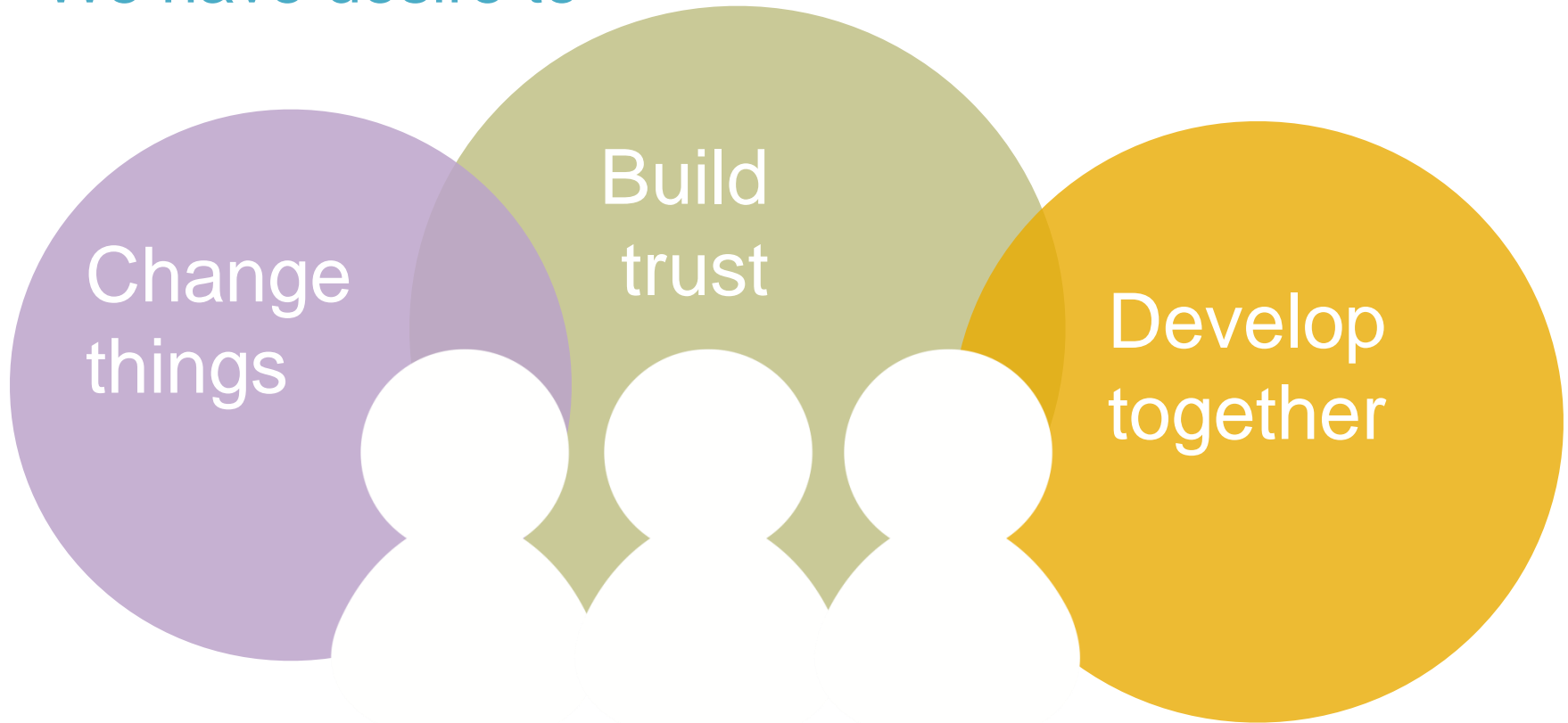
The results of this study are of relevance for both practitioners aiming at developing the alliance contracting practices as well as for academics who are interested in this new, innovative form of contracting.



Conceptual framework of the study has been derived from Lean production and more accurately from Toyotas PPT-model. In the model the first P stands for Process, second P stands for People and organisation and finally T for Tools and technologies.

Why FTA is taking part in LCIFIN project?

We have desire to





Source:

Kent Business School | Centre for Value Chain Research (VCR¹)

www.kent.ac.uk/kbs/applied-research/vcr

Professor Andrew Fearne