



**Amsterdam Conference 2017**  
***Managing Growth for a City in Balance***

Matching innovative business models with urban logistic needs

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# Surfing ...





# Surfing....



# What all cities have in common ?

- ❑ A city generates about:
  - 0.1 delivery or pick-up per person per day
  - 1 delivery or pick-up per job per week
  - 300 to 400 truck trips per 1000 people per day, and
  - 30 to 50 tons of goods per person per year.
- ❑ Urban freight represents
  - 10 to 15% of vehicle equivalent miles travelled in city streets
  - 2% to 5% of the employed urban workforce.
- ❑ 3% to 5% of urban land is devoted to freight transport and logistics.
- ❑ A city does not only receive goods, but is also a place of shipping:
  - 20 to 25% of all truck-km in urban areas are outgoing freight,
  - 40 to 50% is incoming freight and
  - 25 to 40% is originated from and is delivered within the city

# What can we expect ?

## □ Growing urbanisation (European Union)

- 75 – 80% of population lives in urban regions.
- Urban regions will continue to embrace multiple functions:
  - working
  - living
  - leisure
  - shopping
- Need for sustainable development and preservation of quality of life.
- Major generators of freight flows
  - Consumption of goods – imports from other regions;
  - Producer of goods – exports to other regions;
    - ◆ Manly servicing industry (no relevant major industries);
  - Generator of waste.

# Which perceived changes ?

## ❑ Changes in World Societies and Politics

- Globalisation, European Construction, MERCOSUL, NAFTA, etc
- Progressive reduction of barriers to: trade; capital; information; people
- Major technological developments
  - Television, Internet, Mobile phones, etc
- Changes in Societies' culture and way of living
  - Growing intertwine of cultures and fashion;
  - Speed-up of life and volatility of desires (now or never)



# Which perceived changes ahead ?

## □ Changes in World Economics

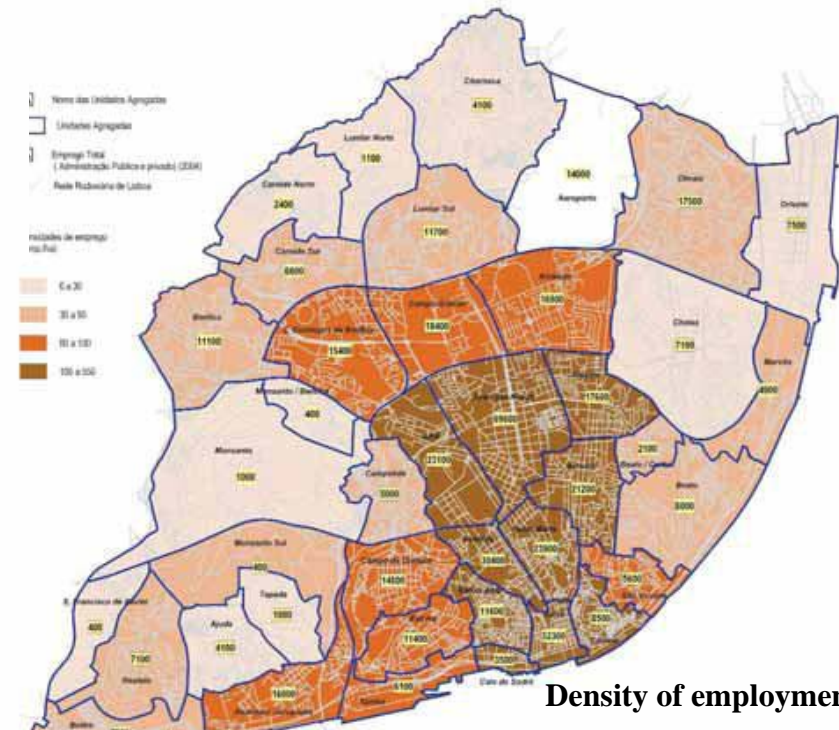
- Displacement of factories to cheap-labour countries (Asia, Eastern Europe, Central and South America, North Africa, etc).
- Fragmentation of production
  - Products are no longer manufactured in a single factory but produced in multiple factories in different locations
- Changes in the Logistics and Supply Change
  - Increase of distance between production and consumption points
  - Need to keep and improve quality of service (reliability, timing, flexibility, etc)
  - Emergence of new concepts (Just in Time, Lean Production, etc)
  - Need to ensure the return of (defected) products (reverse logistics)
  - Decrease of load factor
  - Increase of consumption of transport services (increase delivery to customer's door)
- Emerging of new trading schemes
  - E-commerce (by pass of intermediaries, no need for shops)
  - Social Networks (increasing power of buyers)

# What challenges in managing urban freight logistics ?

- Private initiative with collaborative solutions takes new roles;
- Low public intervention but public policies should act as facilitators for private entrepreneurship and innovation;
- Need of high technical standards (incl environmental and energy)
- Integrated approach to land use and urban living: first, last and transit mile;
- Tailored path dependent approach (each city has its own evolutionary path), no copy-past strategies are effective;
- Innovation is indispensable to solve complex problems.



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### Density of employment



# Lisbon Municipal Regulation for freight activities

Regulamento de cargas e descargas e das bolsas de estacionamento para actividades comerciais

- ❑ In force on 13 July 2004, abandoned on 2007.
- ❑ Trial zone in Lisbon (Avenidas Novas).
- ❑ Regulates:
  - Types of vehicles;
  - Parking places;
  - Timings and scheduling;
  - Pricing;
  - Enforcement.
- ❑ Free handling time up 20 minutes (payment after that).
- ❑ Need for a special license.
- ❑ Enforcement through EMEL and telematic solution, based on Via Verde
  - ❑ Later other technologies tested through STRAIGHTSOL project.
- ❑ After 2.5 years, technology did not work and trial case never ran.

# Definition and establishment of logistic profiles

## Matching needs with solutions

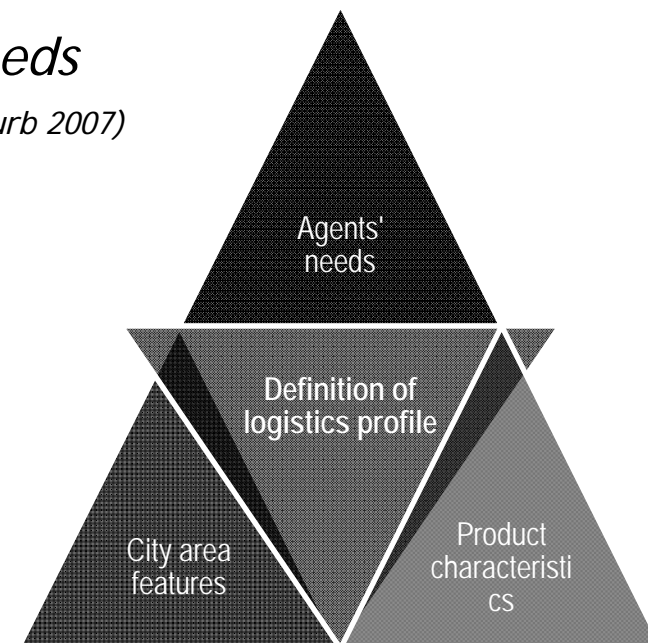
### What is a logistic profile?

*Homogeneous group with similar logistics needs*

*(Source: Macário et al, Logurb 2007)*

#### Step 1: Define logistic needs by defining:

- city area features,
- product characteristics, and
- agent needs



#### Step 2: Characterize logistic profile according these variables

#### Step 3: Determine the most adequate business model matching each logistic profile defined

# Concept of Logistic Profile – City area

Features	Classification		
<b>1.1 Commercial density</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
	<30% Commercial face to residencies/ services/ industry	30% to 70% Commercial face to residencies/ services/ industry	>70% Commercial face to residencies/ services/ industry
<b>1.2 Homogeneity</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
	Several types of services and products	Mix of residential areas with offices and commercial stores	Cluster of one type of service or similar products
<b>1.3 Logistic accessibility</b>	<b>Bad</b>	<b>Reasonable</b>	<b>Good</b>
1.3.1. Measures considering logistic needs	Bad level of access between the shop and the parking (e.g. no loading bays)	Some specific measures considering logistic needs (e.g. loading bays non exclusive)	Transport network suited for the logistic needs (e.g. exclusive loading bays)
1.3.2 Level of Congestion	High level of traffic congestion (Commercial speed < 3km/h)	Reasonable (High on peak hours)	Low (Fluid traffic - commercial speed >12km/h)
<b>1.4 Restriction applied</b>	<b>Yes</b>	<b>No</b>	

Fonte: Turblog.eu (2011)



# Concept of Logistic Profile - Product

Characteristics	Classification		
<b>2.1 Easiness of handling</b>	<b>Difficult</b>	<b>Reasonable</b>	<b>Easy</b>
2.1.1 Size	Large (wheelbarrow, crane)	Medium (> 1 person to carry one unit)	Small (>1 unit per person to carry)
2.1.2 Weight	Heavy (wheelbarrow, crane)	Medium (> 1 person to carry one unit)	Light (>1 unit per person to carry)
2.1.3 Holding conditions	Difficult	Reasonable	Easy
<b>2.2 Special conditions</b>	<b>Special needs</b>	<b>Might have special needs</b>	<b>No special needs</b>
	e.g. valuable products, frozen products, etc..	e.g. open packages, if food handled ambient temperature, chilled, etc...	
2.2.1 Fragility	Fragile	Might have special needs	No special needs
2.2.2 Perishability	Perishable	Not perishable	

Fonte: Turblog.eu (2011)

# Concept of Logistic Profile – Agents needs

Characteristics	Classification		
3.1 Urgency of deliveries	Irrelevant	Relevant	Urgent
3.2 Frequency of deliveries	Low	Medium	High
	< once a week	Several days per week	Daily
3.3 Amounts to be delivered	Few	Several	Many
3.3.1 Number of shops	One shop	Several shops	Retail center/big shops
3.3.2 Vehicles weight and size	Light goods vehicle or smaller vehicles	Van/small truck	Heavy goods vehicles
3.4 Planned deliveries	No defined routine	Defined routine	
		e.g. after hours deliveries, 8-10 a.m., ...	

Fonte: Turblog.eu (2011)

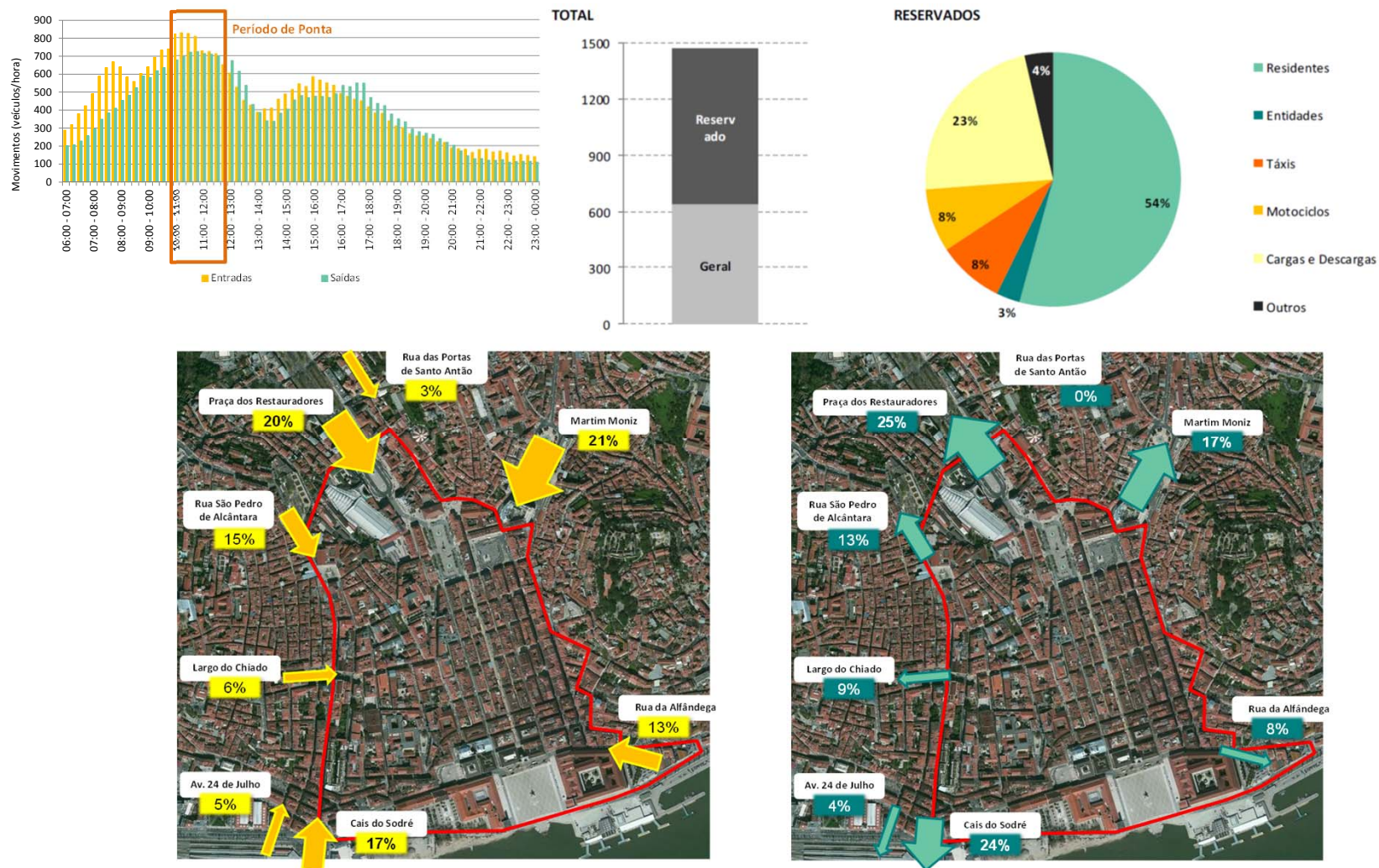
# City of Lisbon – Pilot area – 2012 -2013



Fonte Tis.pt (2012, 2013) - Estudo de Logística Urbana para a Zona Piloto da Baixa, Lisboa



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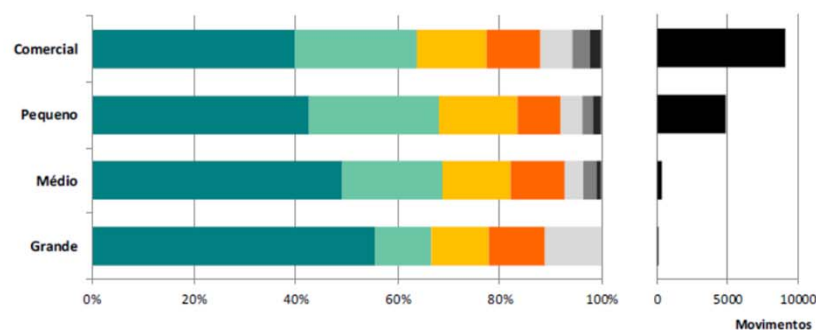
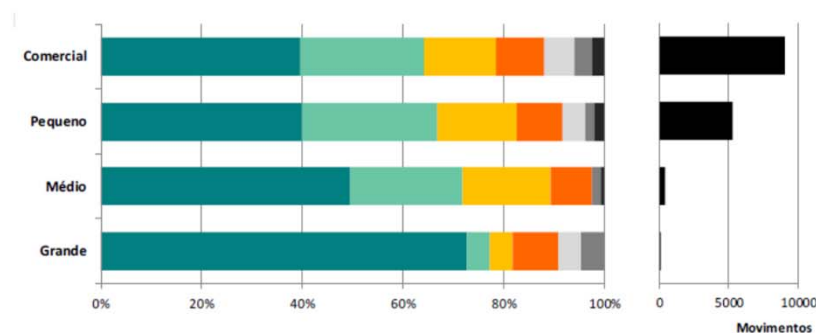
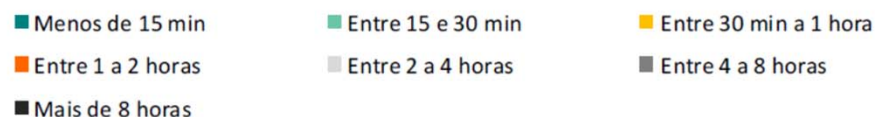
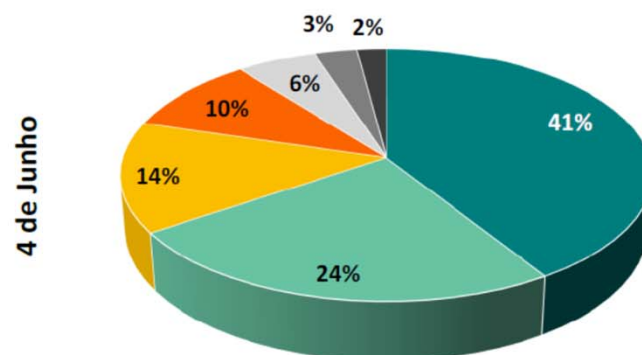
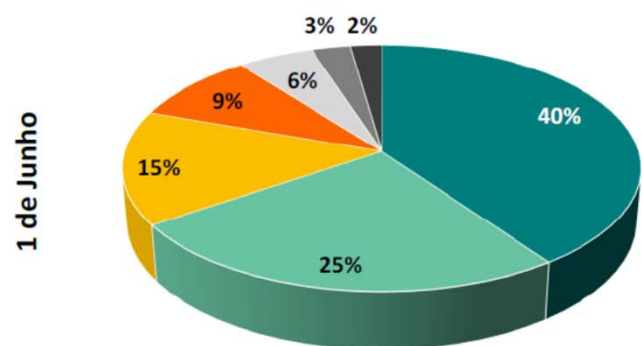


Fonte Tis.pt (2012, 2013) - Estudo de Logística Urbana para a Zona Piloto da Baixa, Lisboa



# City of Lisbon – Pilot area – 2012 -2013

## Vehicles time spent inside the area



Fonte Tis.pt (2012, 2013) - Estudo de Logística Urbana para a Zona Piloto da Baixa, Lisboa

# Logistic profiles identified

		Perfil A	Perfil B	Perfil C	Perfil D	Perfil E	Perfil F	Perfil G	Perfil H
Área Urbana	Estacionamento	Sem estacionamento Com estacionamento geral Com estacionamento C&D							
	Hierarquia viária	3º nível Acesso local Pedonal							
	Janela horária C&D	Existente para vias pedonais Não existente nas outras vias							
	Restrições à circulação	Em algumas vias							
Produto	Facilidade de manuseamento	Fácil	Fácil	Fácil a Difícil	Fácil a Difícil	Fácil	Fácil	Fácil	Difícil
	Necessidades especiais	Requer	Requer	Requer	Requer	Requer	Requer	Requer	Requer
Distribuição	Frequência das distribuições (semanal)	Até 5	Mais de 20	Entre 6 e 20	Até 5	Até 5	Até 5	Entre 6 e 20	Mais de 20
	Duração média da operação (minutos)	Entre 6 e 15	Entre 6 e 15	Entre 6 e 15	Mais de 15	Até 5	Entre 6 e 15	Até 5	Mais de 15



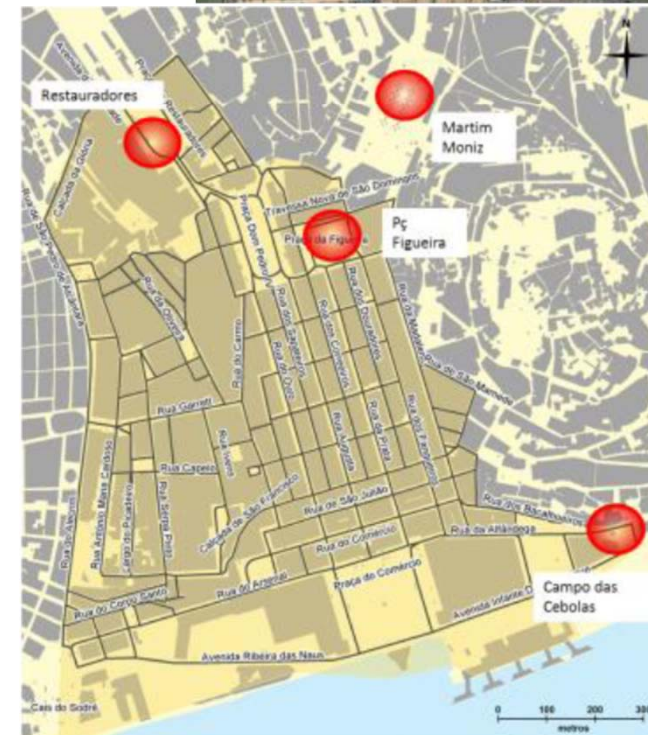
Perfil A	Comércio alimentar de pequena dimensão
Perfil B	Restauração (cafés, pastelarias, etc)
Perfil C	Restauração (restaurantes)
Perfil D	Restauração (bares)
Perfil E	Comércio não alimentar (relojoarias, ourivesarias, etc)
Perfil F	Comércio não alimentar (vestuário, bazar, artigos de papelaria, etc)
Perfil G	Farmácias
Perfil H	Supermercados

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# City of Lisbon

## ❑ Measures proposed and accepted by stakeholders

- ❑ Measure 1 – Freight Lanes – utilisation of freight vehicles in BUS lanes;
- ❑ Measure 2 – Intensifying enforcement and Revision of Urban Logistics Regulation
- ❑ Measure 3 – Urban Consolidation Centre
- ❑ Measure 4 – Micro-Logistics Warehouse
- ❑ Measure 5 – Urban Freight Boxes (embedded with ITS)
- ❑ Measure 6 – Platform to support shared economy initiatives  
(Van pooling + Van sharing + Taxi + Information Systems)



# Lessons learned (I)

## Key Instrument: Innovation System

### **Institutional base setting**

Human capital  
to build and sustain  
a technical  
Foundation  
(**Knowledge transfer**)

### **Interactive processes**

Evolutionary  
processes of  
innovative design  
and development  
of solutions

(**Shared and  
Collaborative  
Solutions** )

### **Monitoring and learning**

structures and  
processes

Assess short term  
outcomes and long  
term impacts

(**information for  
feedback  
mechanisms**)

*The speed of economic change is a function of the rate of learning,  
but the direction of that change is a function of the expected payoffs to  
acquiring different kinds of knowledge (North, 1996)*



# Lessons learned II: Innovation Policy

Policy Tool to induce behaviours in UL	Examples
Direct financial leverage support	Grants, subsidies, loans, provision of equipment or services, loan guarantees
Indirect financial support	Schemes encouraging investment in innovation, venture capital
Information	Information networks, advisor centres, consultancy services, specialist libraries, databases, liaison services
Scientific and technical infrastructure	Public research laboratories, research association, learned societies, research grants
Educational infrastructure	General education system, universities and polytechnics, technical education system, apprenticeship schemes, retraining system

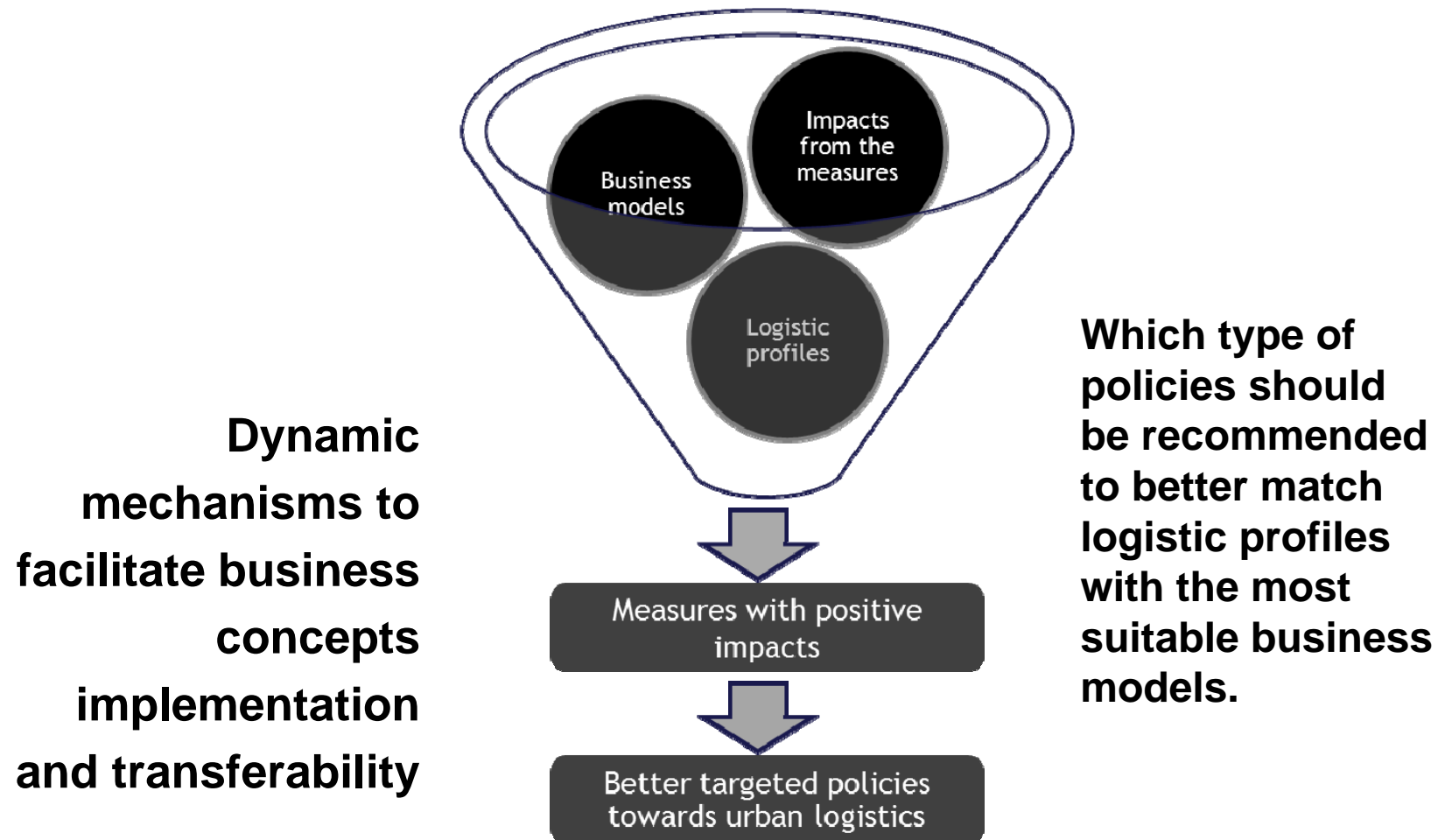
## Lessons learned II: Innovation Policy

Policy Tool to induce behaviours in UL	Examples
Taxation	Company, tax allowances
Regulation	Patents, regulations (e.g., in environmental control)
Public enterprise	Innovation by public-owned industries, use of these as pioneering facilities, establishment of new industries
Political	Planning, regional policies, honours and awards for innovation in UL , encouragement of mergers or joint ventures

**Long term vision, strategy, commitment**  
**Short term monitoring**

# Lessons learned III:

Policy should rely on strategic vision and long term commitment



**Thank you for your time !**

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