Living in Europe's Future Cities
Watertorenberaad/ ULI conference

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and Cities Advisor

Amsterdam

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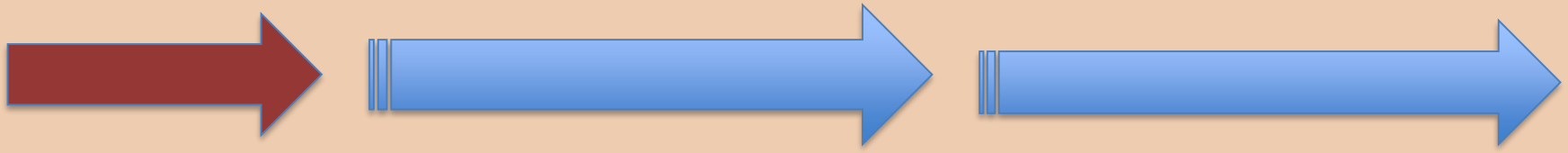
A critical moment for the future of cities

1980 2016 2080 2300



We are one third of the way through a 100 year cycle of urbanisation.

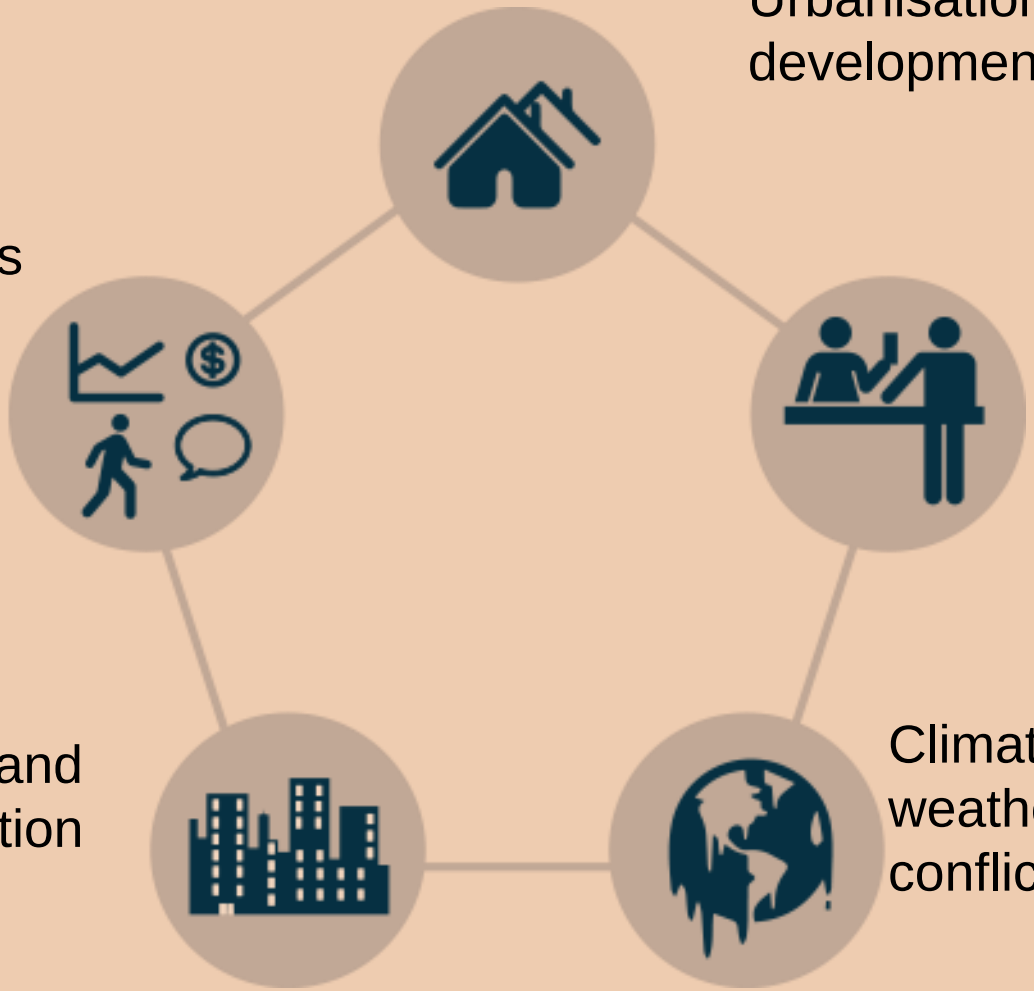
At the end of which global population will stablise and c.90% of people will live in cities...

..and the system of cities will be established for the next 200 years.

So the decisions we make about our cities over the next 30 years are of critical importance

New Global Cycle in City Policies

Drivers



Five ingredients to optimise cities

Finance and fiscal policies frameworks for municipal finance

Joined-up governance To tackle integrated problems

Human policies v spatial policies (education, skills, housing, health, social services)

Functional geographies metropolitan co-ordination

Institutions 'vertical' and 'horizontal' relationships

Source: William Tompson, OECD, 2013

3 fundamental options for global population growth and urbanisation

Allow Cities to Sprawl

Build New Cities
(or Districts)

Densify Existing Cities

Density: drivers, dividends and debates

June 2015

Authors:
Prof Greg Clark
Senior Fellow, ULI Europe

Emily Moir
Director, The Business of Cities Ltd

Urban Land Institute

The Density Dividend: solutions for growing and shrinking cities

October 2015

Authors:
Prof Greg Clark
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Director of Intelligence at The Business of Cities Ltd

Urban Land Institute

TH Real Estate

Popular Density is Critical for Cities to Realise Advantages and Avoid Decline

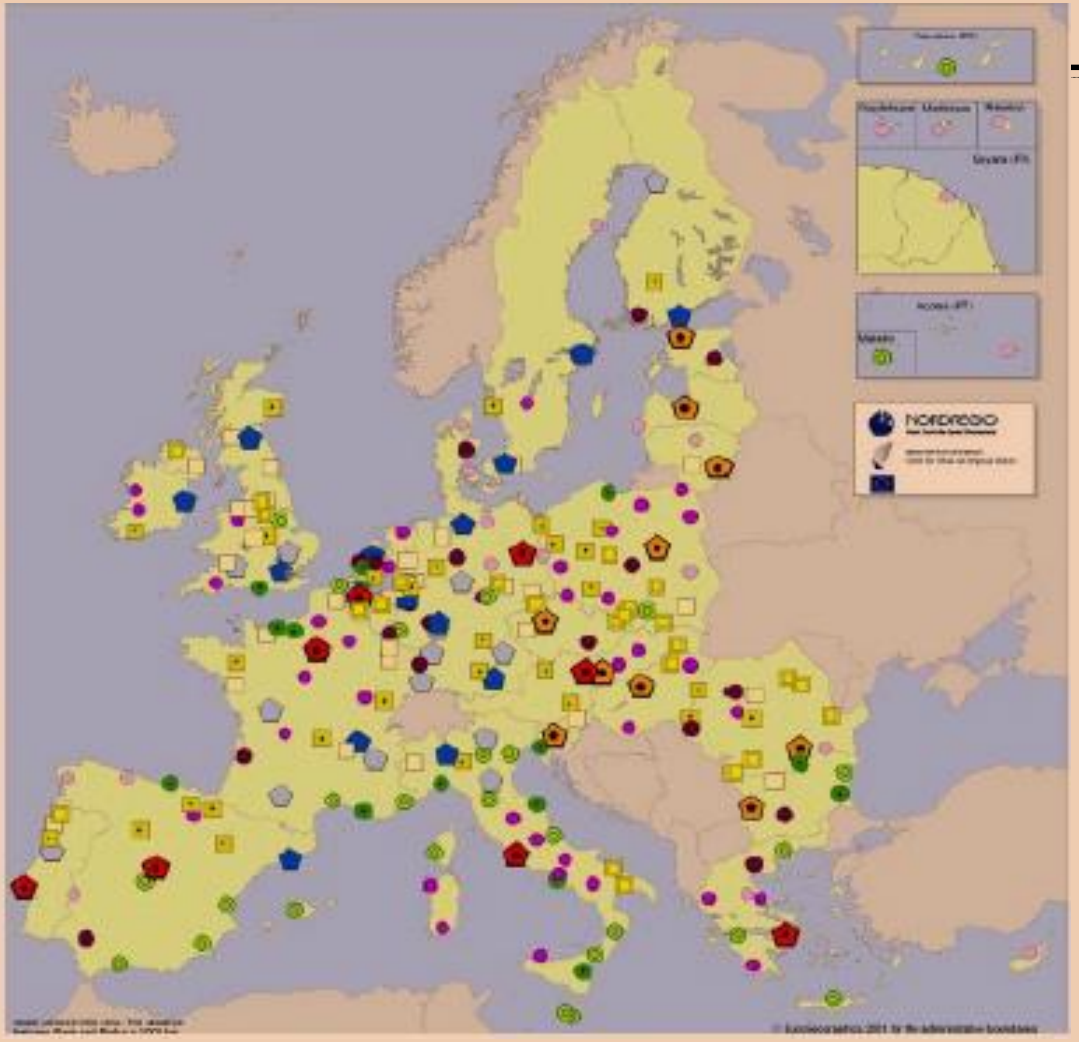
Different Types of Globalising Cities

What is a type?

Origins
Performance
Aim
Path
Point in cycle

The European System of Cities

State of European Cities Report



Europe's cities: the numbers

828
cities

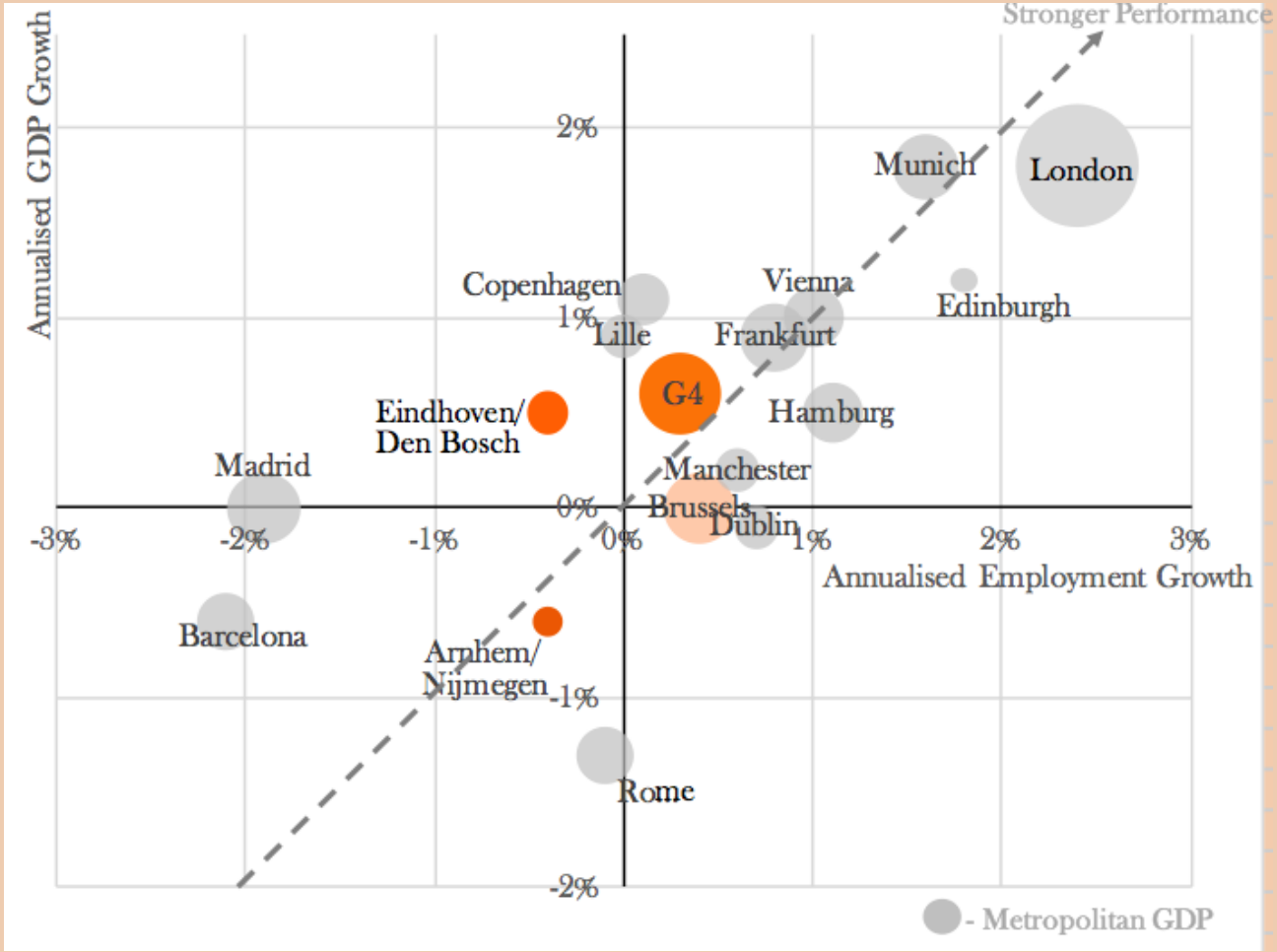
2
global cities

6
Large urban centres

18
2nd tier metrop. areas

38
3rd tier cities

European Cities since the recession



2009-2014 figures
Source: Brookings Global Metro Monitor

Europe’s cities: retained strengths

Strategic imperatives for different city types

	Examples	Strategic imperatives
Established World Cities	London, NYC, Hong Kong, Tokyo, Paris	Managing externalities of success; two-tier and two-speed economies; sector competition.
Emerging World Cities	Istanbul, Seoul, Sao Paulo, Shanghai, Mexico City, Moscow	Metropolitan infrastructure; urban restructuring; quality-oriented growth; co-ordination.
New World Cities	Auckland, Barcelona, Brisbane, Berlin, Munich, Santiago, Oslo	Build profile in education, knowledge, tourism; attract international talent; leverage events; air links
High Quality of Life Cities	Auckland, Copenhagen, Vienna Seattle, Vancouver, Zurich	Entrepreneurship, sustainability, preserving affordability, building scale.
Specialised centres	Abu Dhabi, Bangalore, Manila, San Jose	Diversification; adjust to new needs of innovation economy; rise up value chain; spread job creation.
Port and Airport cities	Atlanta, Busan, Hamburg, Rotterdam	Modernise and upgrade logistics capacity; manage re-development; re-boot brand; grow productivity.
Visitor destinations	Bangkok, Las Vegas, Macau, Prague	Build business and investor brands to complement tourism.
Knowledge hubs	Helsinki, Nanjing, Stockholm, Tel Aviv, Utrecht, Eindhoven	Networks and positioning in key markets; liveability, housing and affordability.
Re-emerging capital cities	Bogota, Budapest, Bucharest, Riga	National reforms; business leadership, broader investment system; retain and re-attract graduates.
New gateway cities	Antalya, Lagos, Shenzhen	Adjust to new sources of growth; efficiency, design.

Disruptors

The key disrupters

Digitisation

- How we work, play, buy, interact and communicate.
- More premium on automating processes and digital systems.

The Global War for Talent

- Gaps in supply of exceptional talent.
- More emphasis on location and lifestyle.

The key disrupters

The Sharing Economy

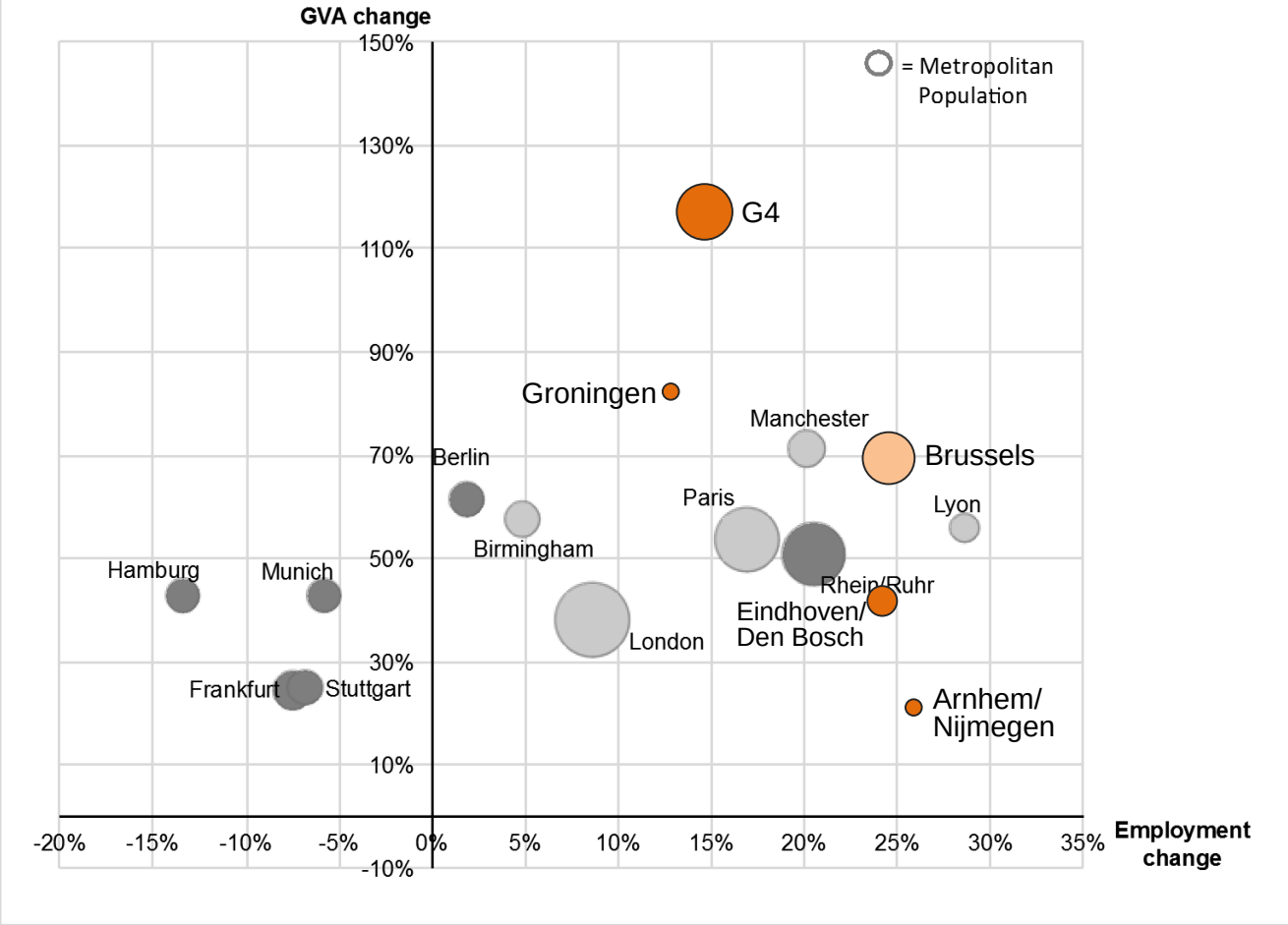
- A new era of micro-entrepreneurship
- Shapes company location, financing, preferred business framework

Big Data and IoT

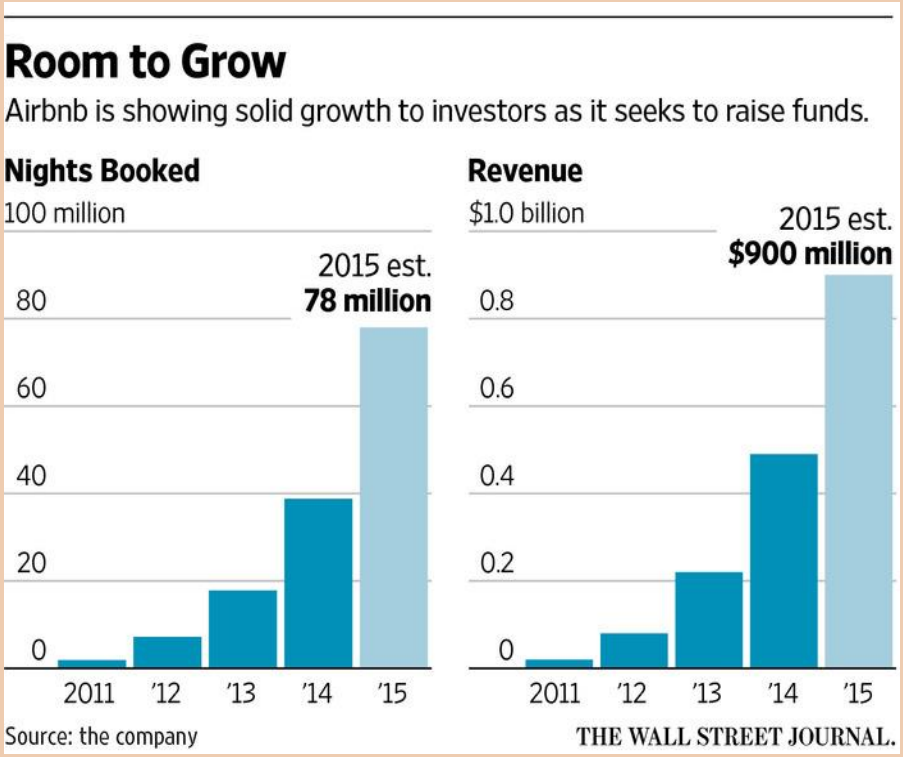
- Products and objects can generate high value insights.
- Socially useful apps or tools.

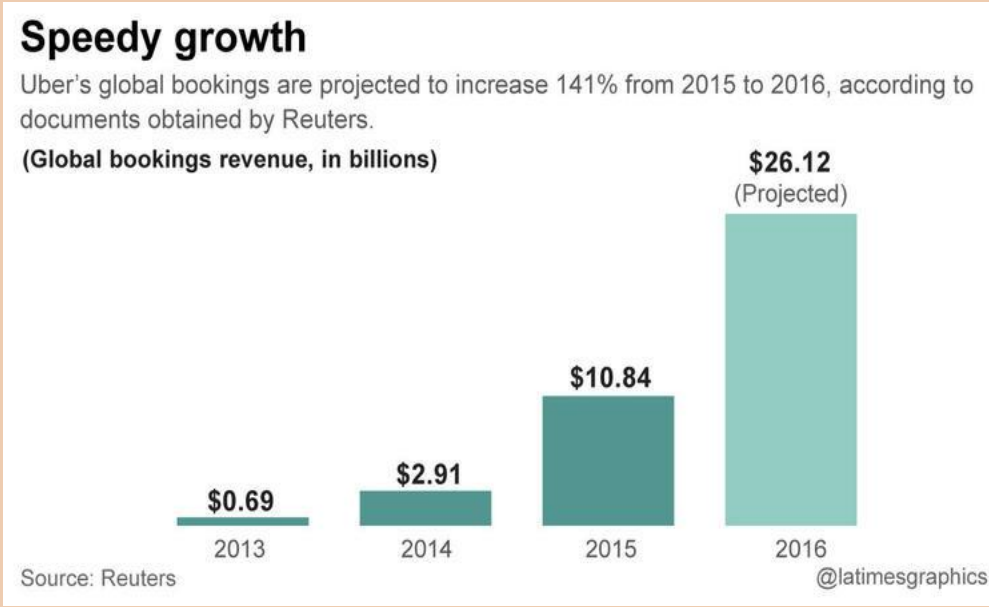
The rise of the digital economy

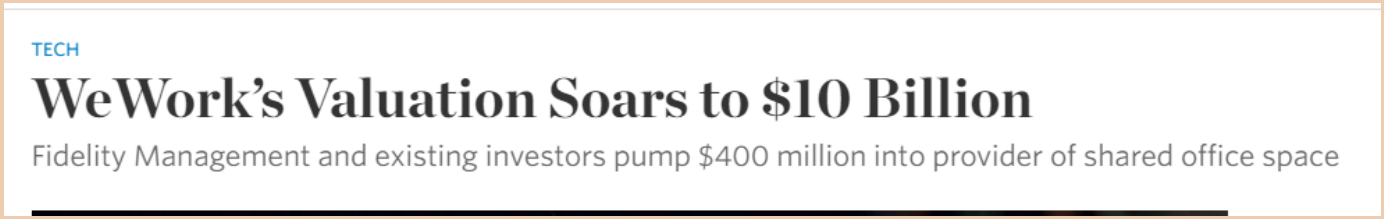
Job and GVA Growth in ICT Sector 1998-2014 (Metro areas in Europe)



The Rise of the Sharing Economy





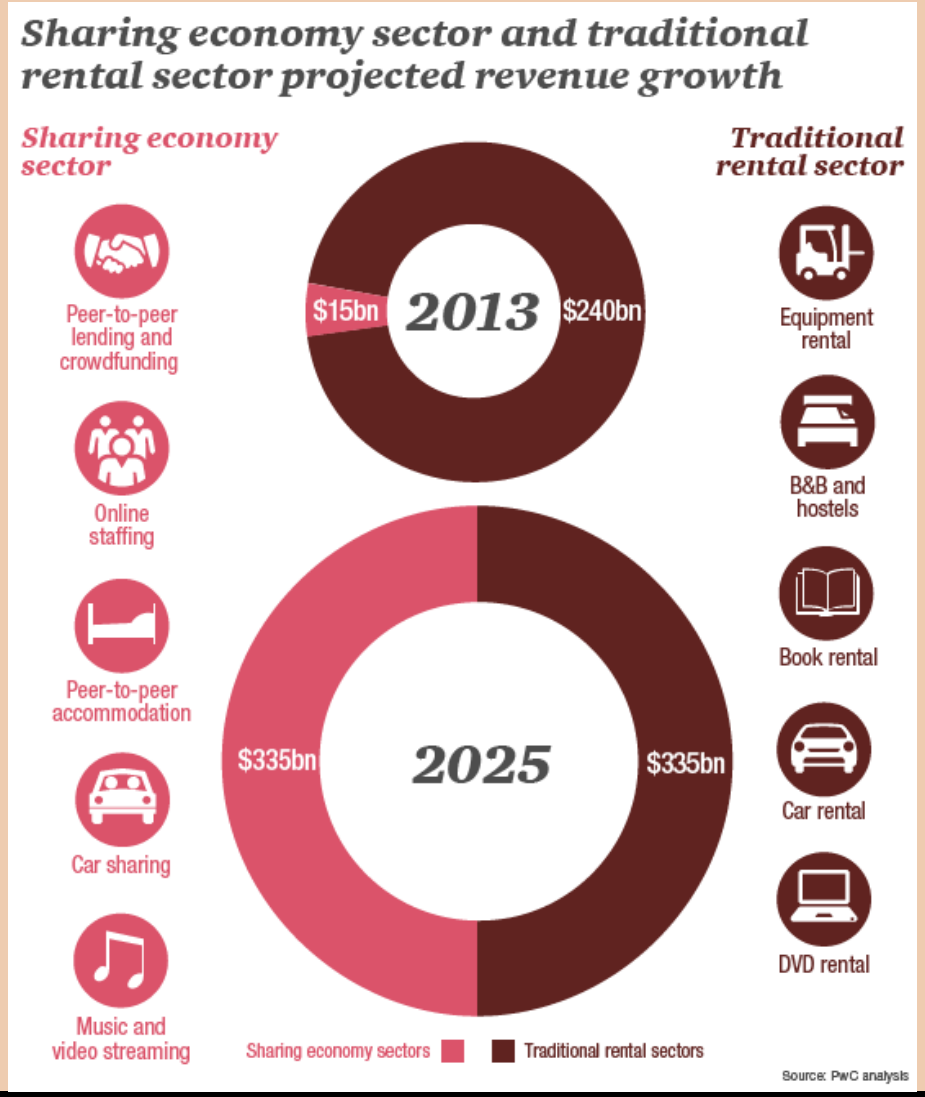

TECH

WeWork's Valuation Soars to $10 Billion

Fidelity Management and existing investors pump $400 million into provider of shared office space

Source:
Wall St Journal (L); LA Times (R)

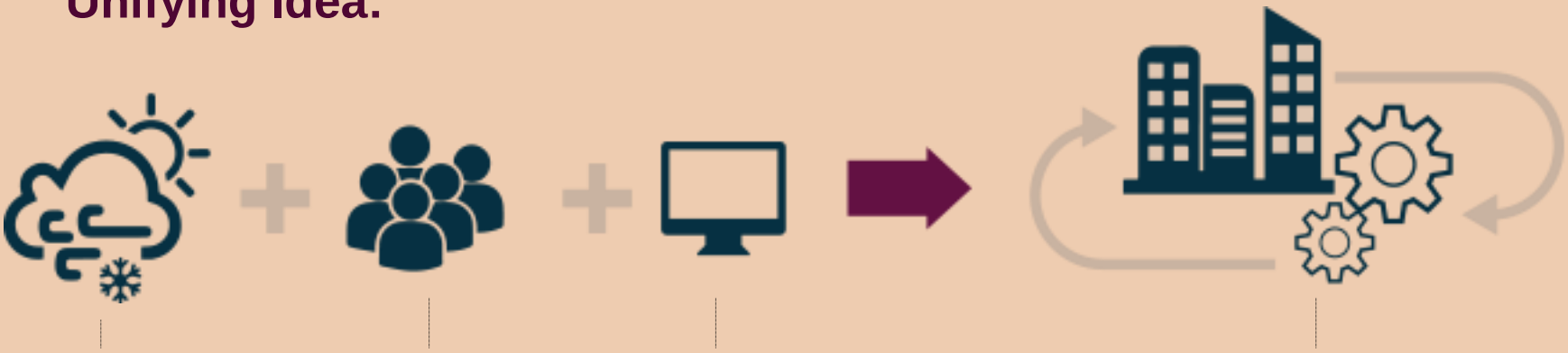
And projected further growth….



Source: PWC

The Rise of Smart Cities

Unifying Idea:



Climate + Demographic change + Technology → Integrated city management and inter-operability of city services

But requires:

- ➔ More empowered cities
- ➔ Aligned utilities and infrastructure providers
- ➔ Co-ordinated governance
- ➔ Suitable financial instruments
- ➔ Willing city leaders
- ➔ Engaged citizens
- ➔ Incentive frameworks

Example 1 3D printing

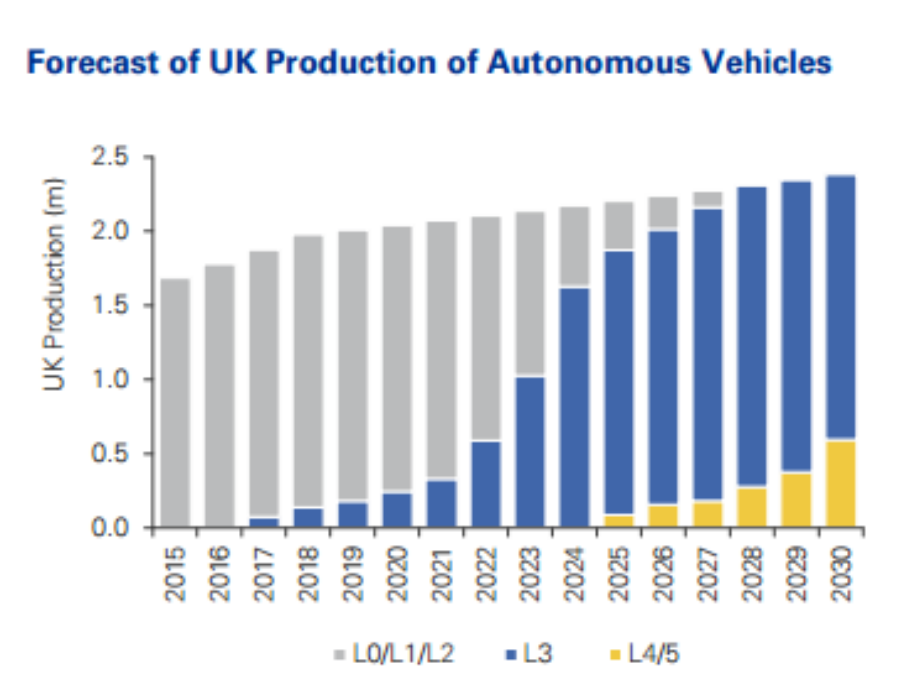
- 1 in 4 enterprises in developed nations own or are planning to buy a 3D printer (Deloitte)
- Particularly popular in automotive, aerospace, dental, high tech, fashion and medical sectors.
- **But** largest and most sophisticated units can cost close to $1m – therefore evolution of:
  - Printer centres like the *3D Experience Centre*, Melbourne around which small firms with 3D needs cluster
  - Apps like *"3D Hubs"* which connect people with 3D printing needs to others who have printers which are under-used. Creates a network of 'micro-factories' in people's homes and offices.

Example 2 Autonomous vehicles

- Lane assist technology and autonomous emergency braking already in production
- Full end to end autonomous journeys anticipated by 2030

Effect on cities?

- Potential for mass transportation to be offered as a service – better vehicle utilisation and declining congestion and pollution
- Vehicles will be able to park themselves out of the city centre allowing for better use of urban space
- Emergency services can respond more quickly by alerting oncoming vehicles



Grey = Partial automation
Blue = Assisted automation
Yellow = High/ full automation
Source: KPMG

Example 3 Internet of Things

The network of physical objects - devices, vehicles, buildings - embedded with electronics, software, sensors, and network connectivity that enables these objects to collect and exchange data.

"Digital urbanism" - becoming a central pillar for urban planners, architects, developers, transport and public services providers.

Effect on cities? Opportunities for:

- improved building and road management
- more efficient traffic flow
- better informed policing
- basic services e.g. street lighting, waste collection can be managed more accurately to reflect changing patterns of need and demand
- Healthcare, education, and more!

Example 4 Artificial Intelligence and Robots

- Next 20 years - an anticipated revolution in use of autonomous robots.
- Developing from machines which repeat set functions to 'beings' which have some freedom in how they achieve their human-defined goals.

Effect on cities? 3 examples:

- **Elderly Care**: EU project STRANDS: development of portering robots which can learn to assist nursing staff in care homes. The robots will support patients by allowing overworked staff to perform more caring duties. May also extend possibilities for in-home care and affect people's housing choices.

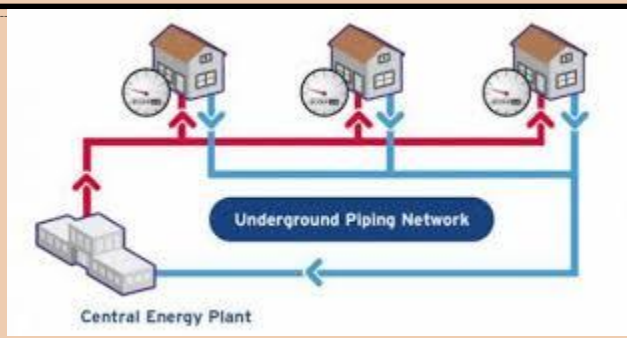
- **Energy Efficiency**: the International Energy Association argue that AI "*represents the most important plank in efforts to decarbonise the global energy system and achieve the world's climate objectives.*"

- **Security:** Using 4D mapping of the environment to detect changes and unusual situations that humans might not necessarily recognise.

Example 5 New energy systems

New energy sources include hydroelectric, wind, solar, tidal, hydrogen, biomass, biofuels, geothermal.

New energy systems include District energy systems (DES) which combine district heating and cooling with CHP, thermal storage, heat pumps and/or decentralized energy.



Effect on cities?

DES can provide a local, affordable and sustainable energy supply, improving urban energy efficiency by allowing:

- Recovery and distribution of **surplus** and **low-grade** heat and cold to end-users
- **Storage** of large amounts of energy – such as surplus wind power or surplus heat in the summer – at low cost compared to other energy storage options
- Integration and **balancing** of variable renewable power – e.g. through conversion to heat and storage for use seasonally.

DES have potential to create **smart districts** not just smart blocks.

Example 6 Mundane Technologies

Mundane technologies have reshaped our cities:

Height

Depth

Systems

What are the mundane technologies of the future? Perhaps:

What could be the disruptors of the future?

- Rapid penetration of robotics / driverless cars etc
- Global attack on IT infrastructure
- Improved energy storage capacity

But its not just about tech…..

Social

- Disease pandemic
- Rapid expansion / adoption of sharing economy
- Life extension tech becomes widely available

Environmental

- Runaway greenhouse effect
- Global environmental catastrophe

Political

- World divides into ‘fortress blocks’
- Collapse / mass exit of members from EU
- Zero immigration policies adopted

…..and the demographic disruptor: Millennials

Millennials and their ‘disruptive’ preferences:

1. **Urban** over suburban
2. **Walking / cycling** over private cars
3. **Saving** over spending (e.g. living with parents over renting)
4. **Entrepreneurship** over corporate ladder-climbing
5. **Sharing of goods** over owning goods and services

Millennials and their (disruptive) preferences cont:

6. **Public amenity** over private space
7. **Online consumption** over physical consumption
8. Environmentally and socially **conscious**
9. **Authenticity** over value
10. Value **community** and **experiences**

But don’t forget ageing populations

Both active retirees…

…. and a generation who are living longer than ever

And we must also remember…..

Needs of new migrants

Changing parent preferences…

..and persisting family values

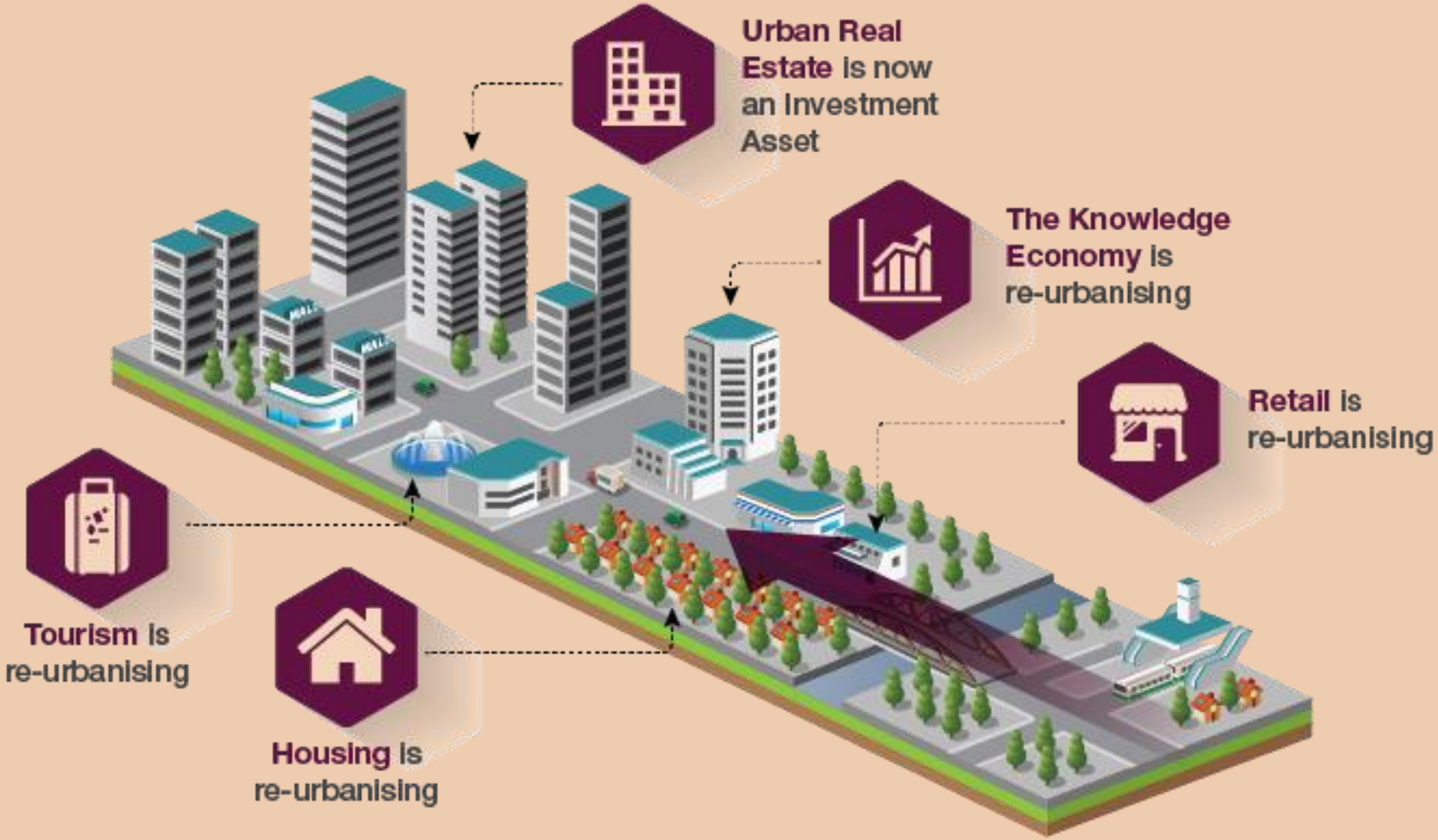
Smart Compact Urban Living& Densification

a big chance for Europe

Cities and business: 6 key trends

1. Cities are Emerging Markets for Businesses
2. Businesses are (Re)Urbanising
3. The rise of Tradable Urban Services
4. Rebranding for city markets and consumers
5. Cities are Hubs of Business Innovation
6. Businesses restructuring to meet City goals

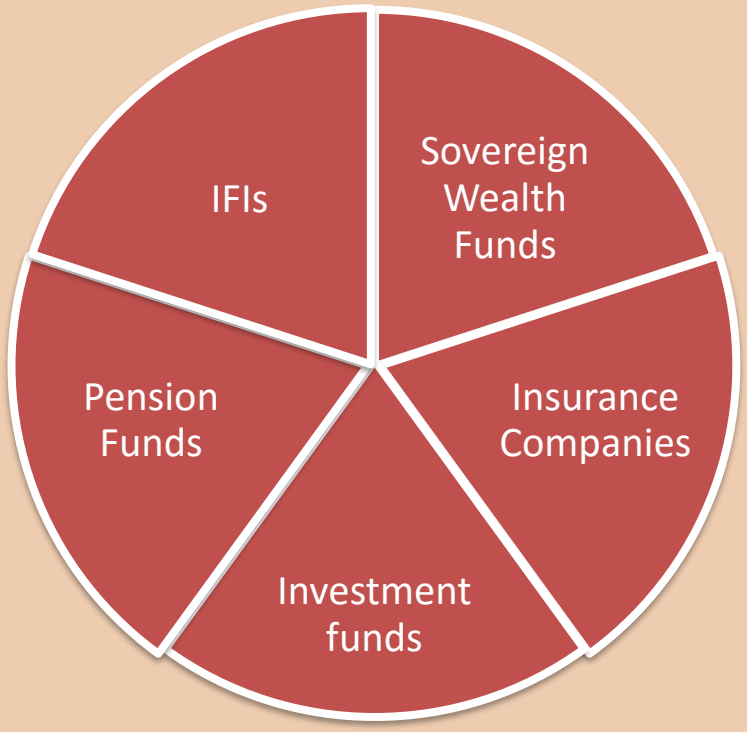
Re-urbanisation – in all its forms



The Re-urbanisation of Capital

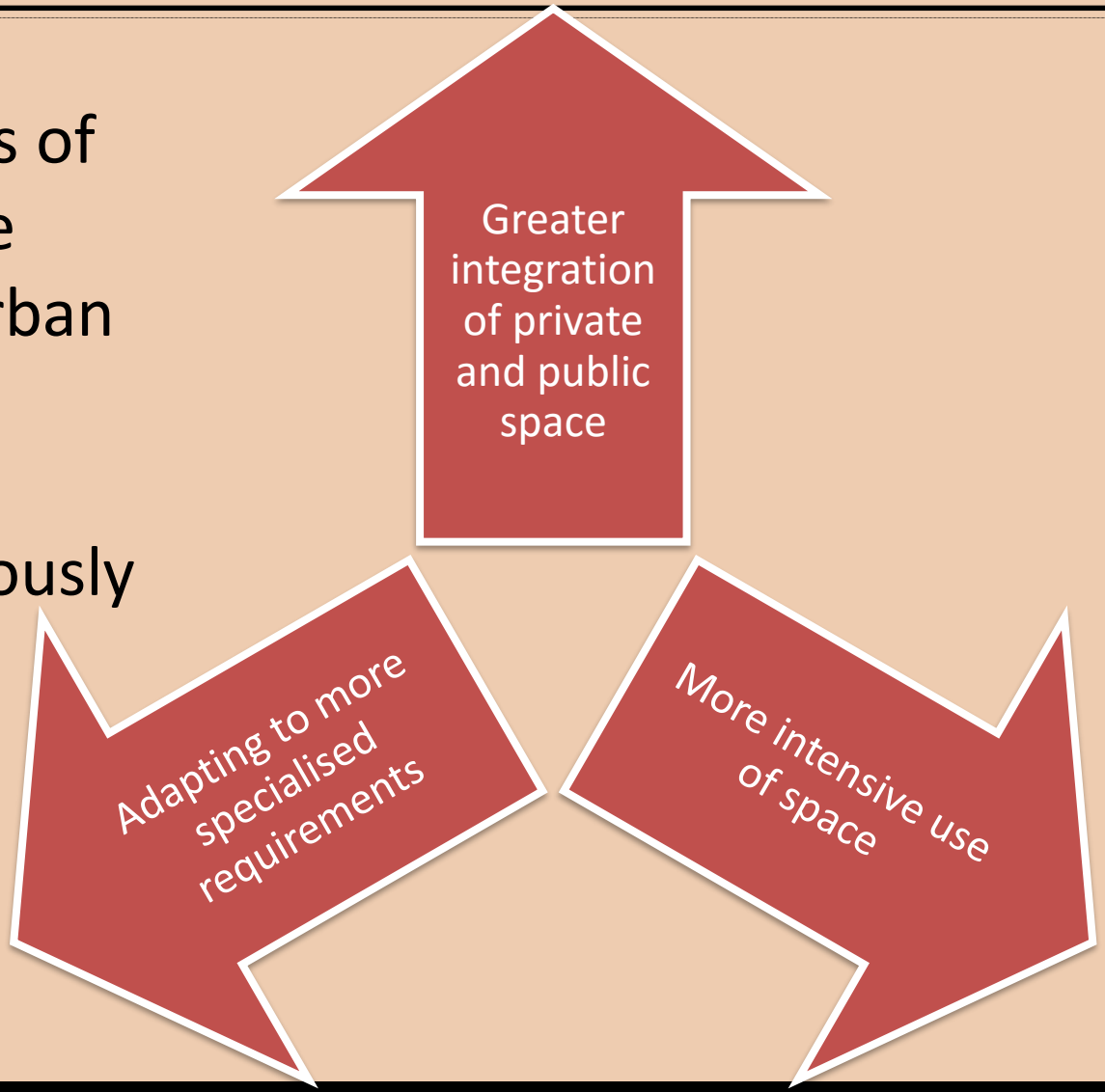
- Urban real estate growing in popularity with major investors: commercial property transactions totalled **$1.2 trillion** in 2015
- Seen as an important **hedge** against inflation, a means of **diversifying** investments and spreading risk.
- Global stock of institutional-grade real estate will expand by more than 55% 2012 to 2020 (PWC).
- Traditional preference for '**core**' real estate: London, Paris, New York
- Now **expanding** horizons to a wider range of cities in search of value:
  - Gateway cities eg Mumbai, Jakarta, Auckland, Seoul
  - Secondary cities in safe national markets e.g. Lyon, Berlin, Manchester

Who wants a piece of the cities pie?

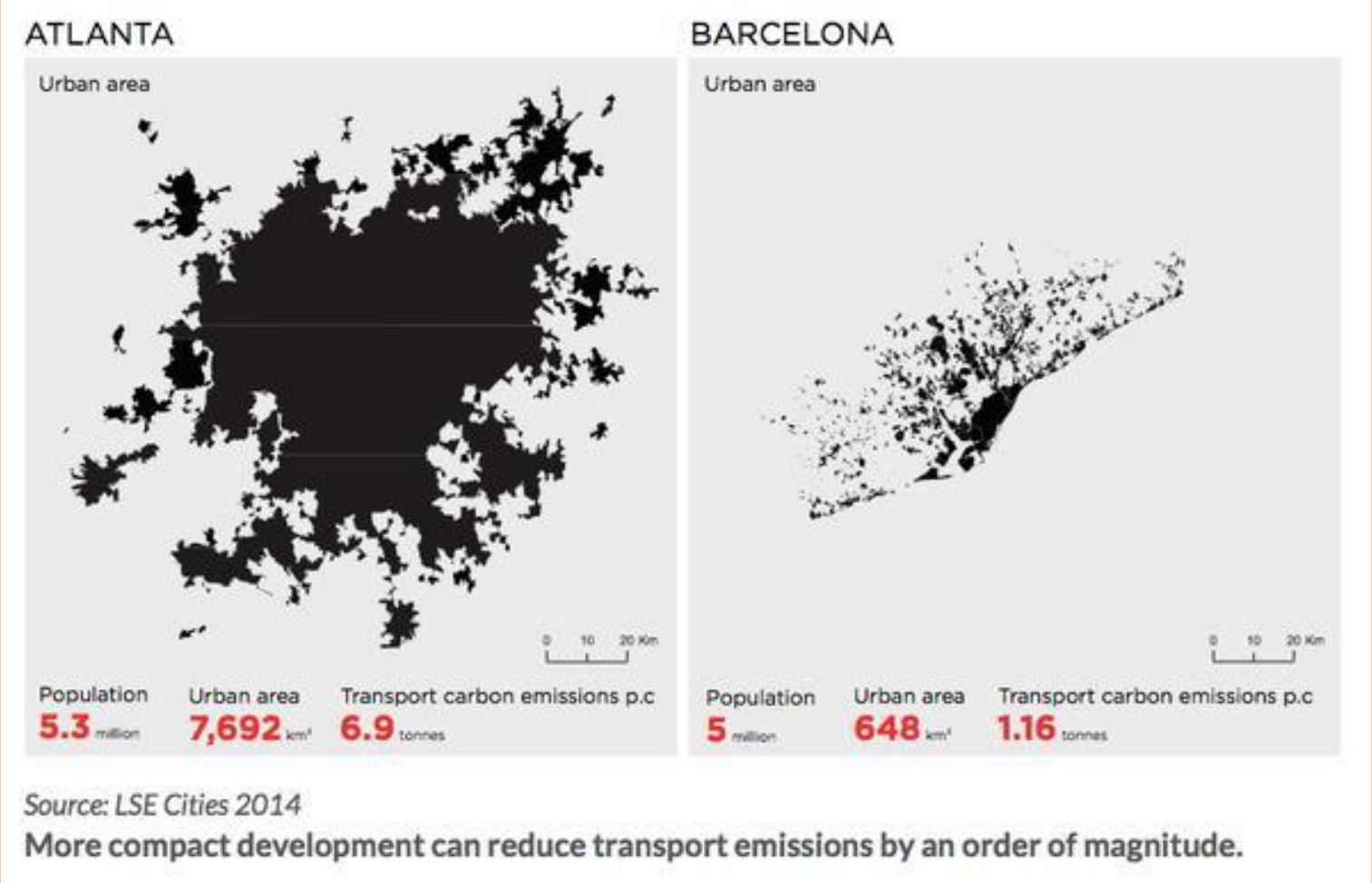


Real Estate in Future Cities

The drivers of change are pushing urban fabric in 3 directions simultaneously



Comparative Densities of similar populations

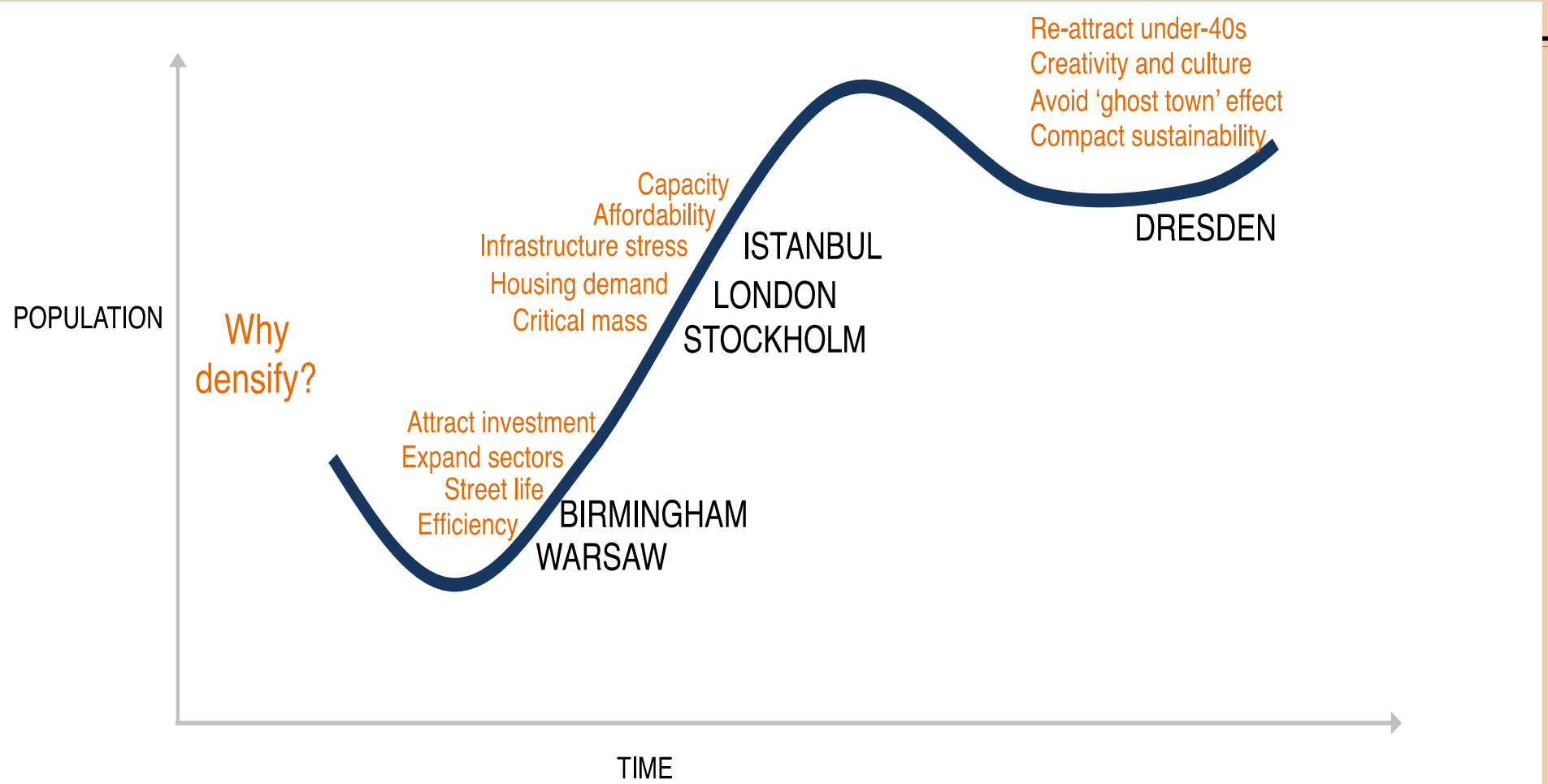


Source: LSE Cities 2014

More compact development can reduce transport emissions by an order of magnitude.

Doomed Density: memories, myths, and mixed feelings

Different cycles and paths for cities



Differentiating good density from bad density

Mixed Use | Connected | Planned | Spacious

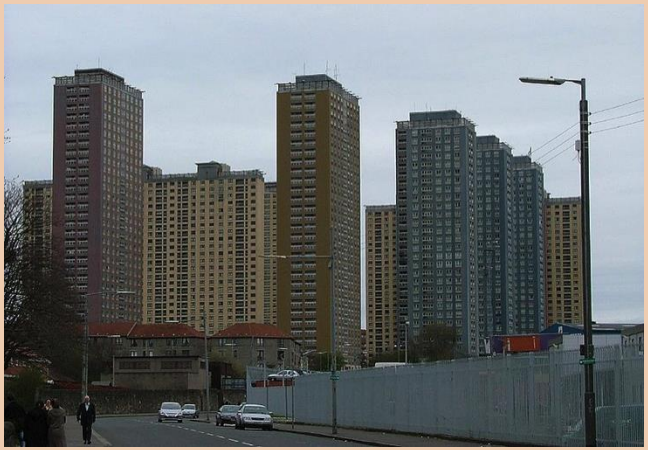
Liveable | Outcomes of Good Density | Cohesive

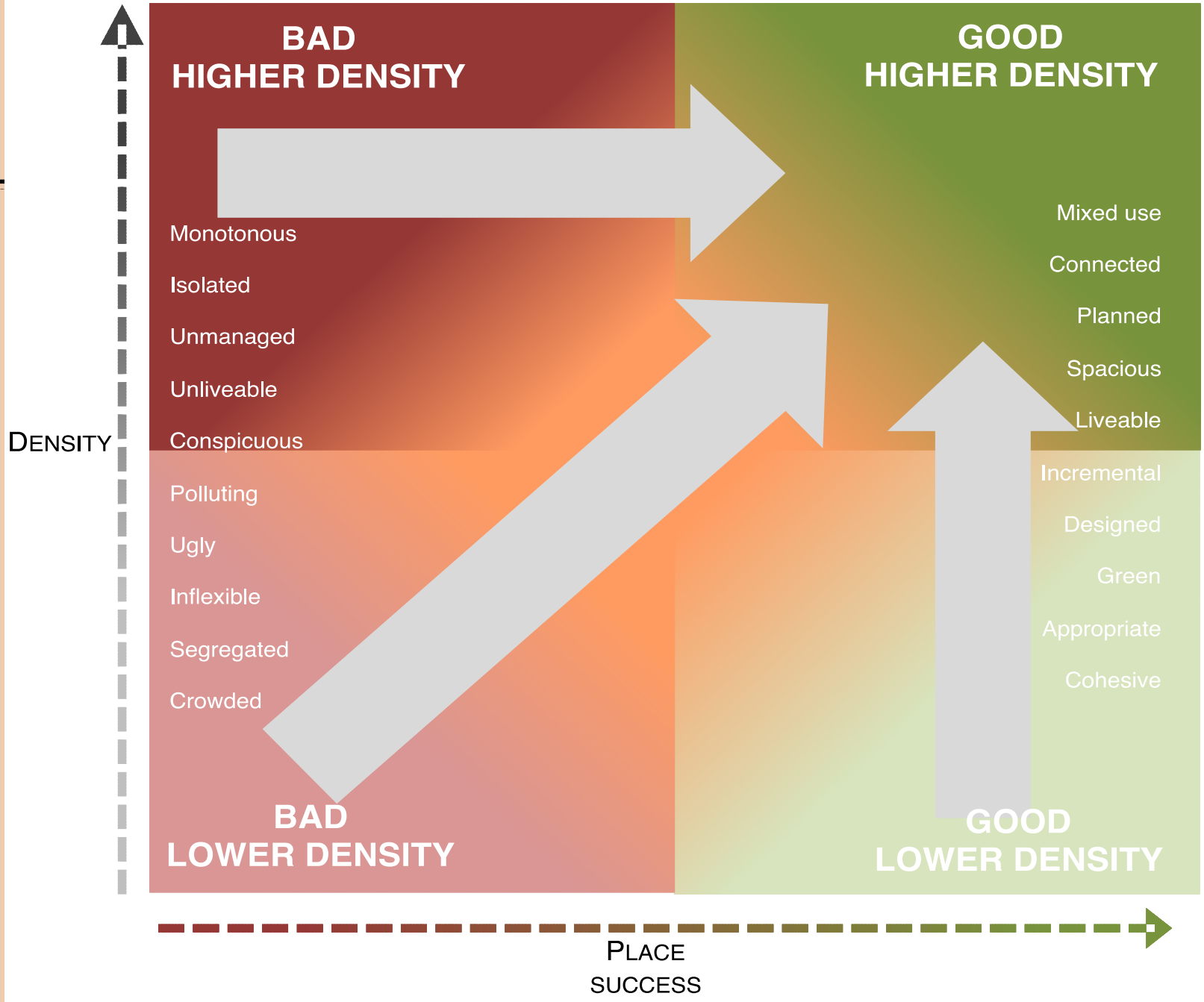
Incremental | Designed | Green | Appropriate

Monotonous | Isolated | Unmanaged | Unliveable

Crowded | Outcomes of Bad Density | Conspicuous

Segregated | Inflexible | Ugly | Polluting

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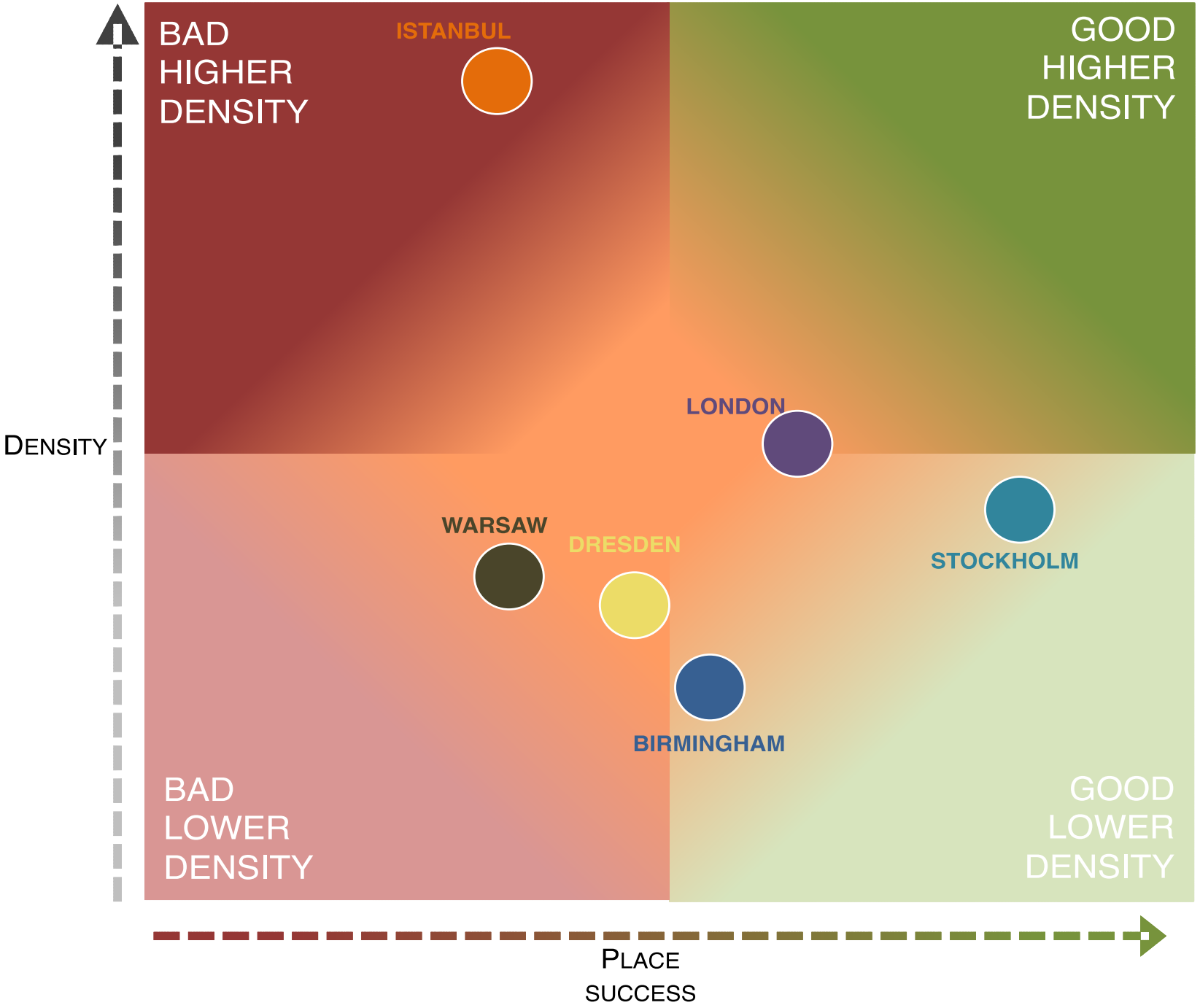
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GOOD
LOWER
DENSITY
PLACE
SUCCESS

INFRASTRUCTURE

Unlocks sites and scale

Increases connectivity and access

Enables mixed income and mixed use

DENSITY

Value can be captured and reinvested.

Provides critical mass + value creation.

Infrastructure systems: the new silk road?

Tactics of Density

- Right mix of locations
- Sequenced and integrated projects
- Quick wins
- Regional collaboration
- Re-imagining the suburbs

Regeneration of disused sites
(e.g. London Kings Cross)

Intensification of transport interchanges
(e.g. Warszawa Zachodnia station)

Redevelopment of existing buildings
(e.g. Dresden's Prager Zeile)

Different sites for densification

Building higher in city centres
(e.g. Birmingham Enterprise Zone)

Suburban infill and expansion
(e.g. Vallingby in Stockholm)

Land reclamations and manmade peninsulas
(e.g. Atakoy, Istanbul)

Positive Psychology of Popular Density

Densification and opportunity

For different age groups and points in life cycle

Sharing economy and the shared city

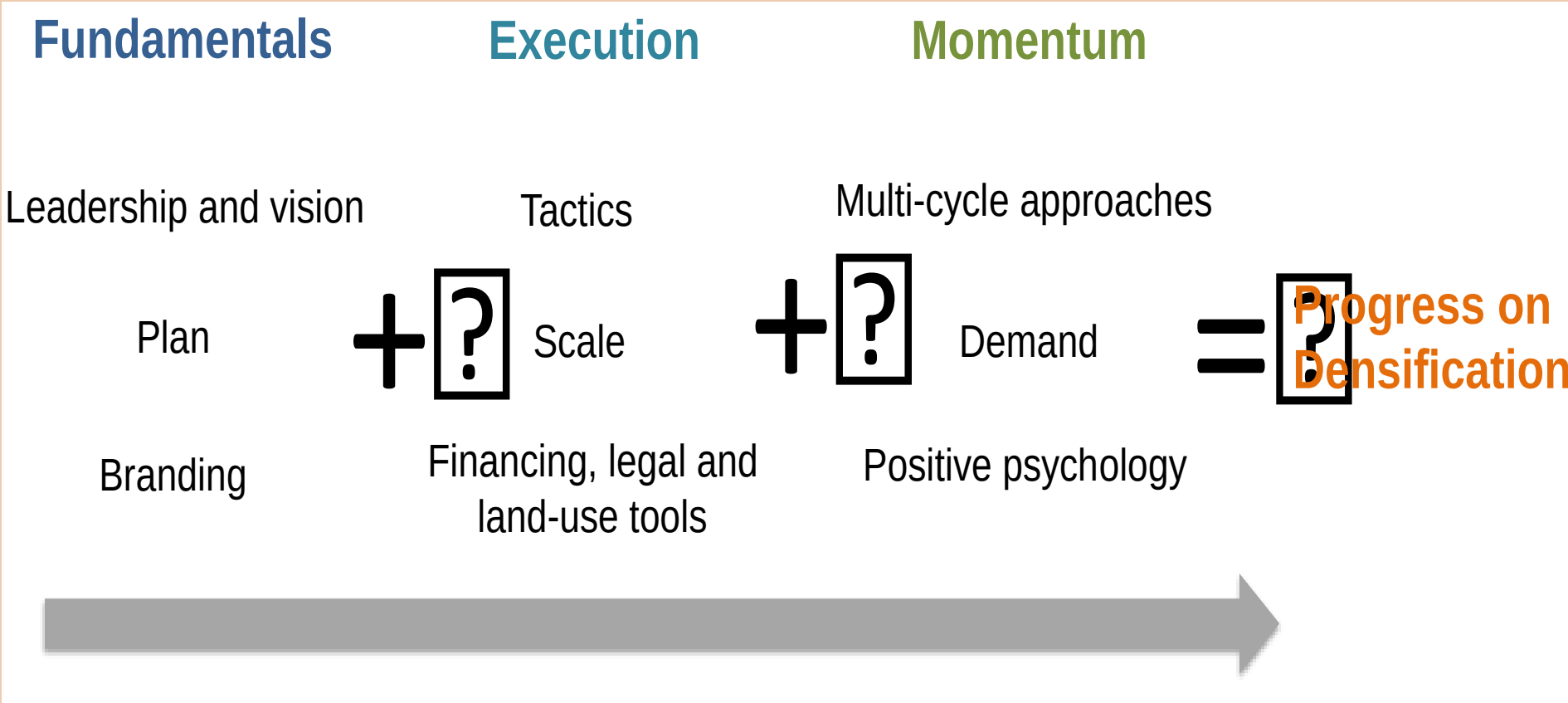
Trade off private space for public amenity

Urban life-style & vitality

Negotiated and incremental participation

Identity and Belonging; urban character

A new Equation on Density



London

Fundamentals		Execution		Momentum	=	Progress on Densification
Leadership and Vision		Tactics		Multi-cycle approaches		
Plan	+	Scale	+	Demand		
Branding		Financing, legal and land-use tools		Positive psychology		

Established
Emerging
Not yet visible

Birmingham

Fundamentals		Execution		Momentum	=	Progress on Densification
Leadership and Vision		Tactics		Multi-cycle approaches		
Plan	+	Scale	+	Demand		
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Established
Emerging
Not yet visible

Dresden

Fundamentals		Execution		Momentum	=	Progress on Densification
Leadership and Vision		Tactics		Multi-cycle approaches		
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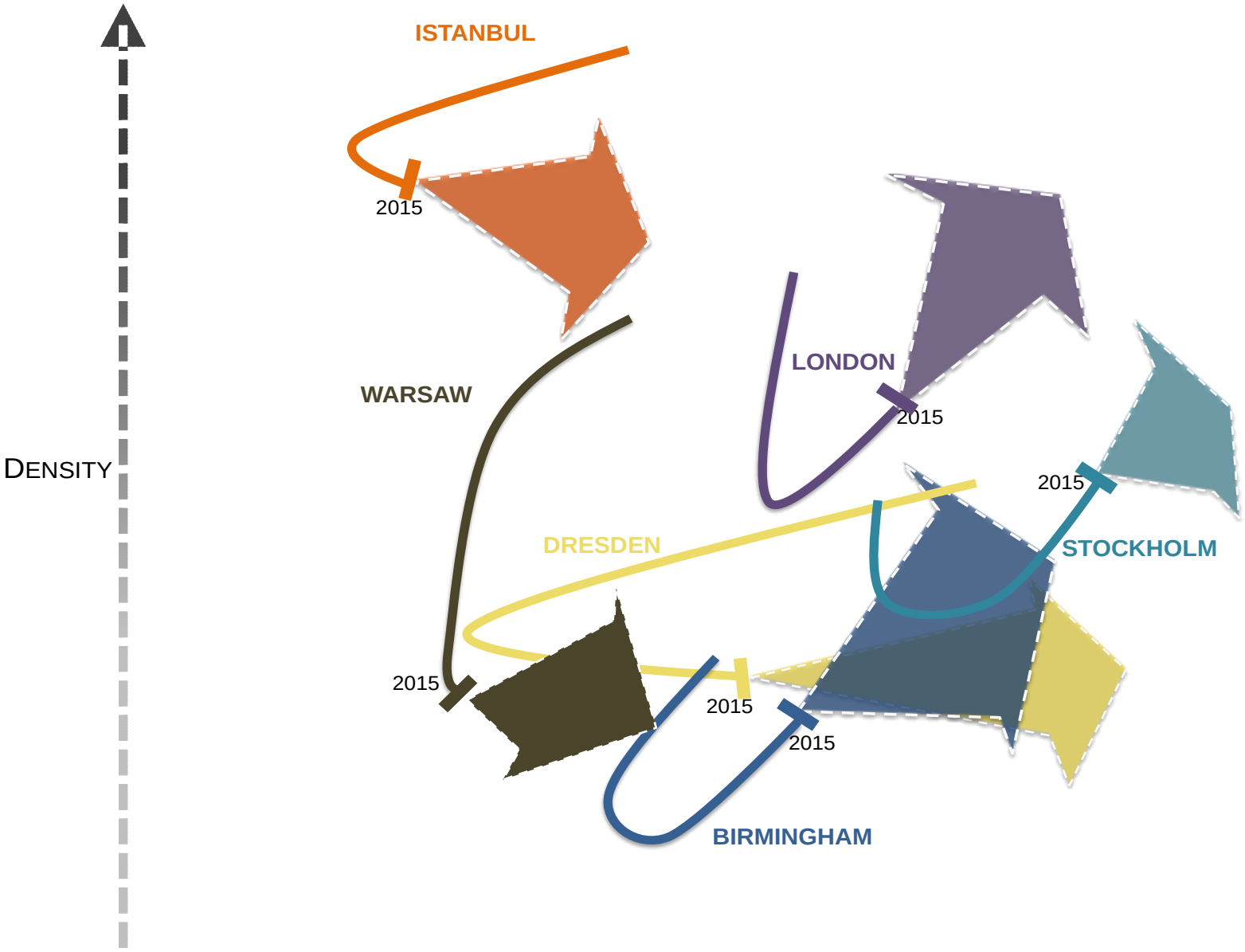
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STOCKHOLM
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BIRMINGHAM
DENSITY
PLACE
SUCCESS

Living in Future Cities

1. Innovation economy space

Innovation districts

e.g. Tech City, East London

Innovation campuses

e.g. Kista, Stockholm

Innovation corridors

e.g. Washington DC Digital Tech Corridor

Innovation Hubs

e.g. iHub, Nairobi

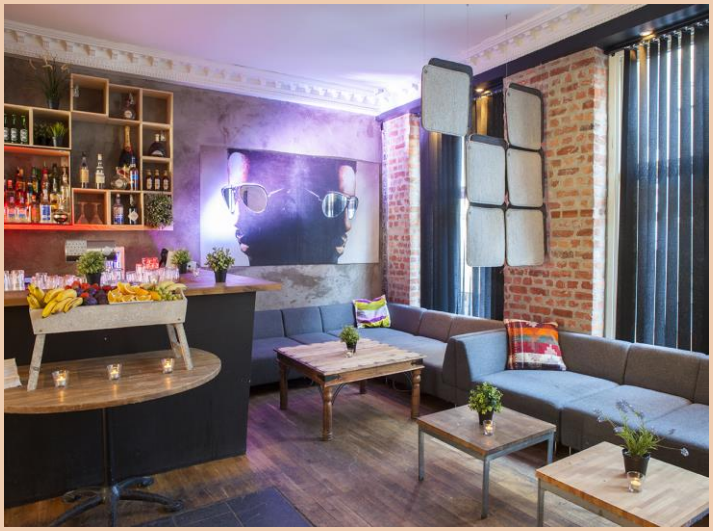
Shared workspace

- The flexible office now accounts for 8 per cent of newly occupied global office space (Cushman & Wakefield)
- Not restricted to Europe / US: Shanghai now has more than 100 co-working spaces
- Not limited to tech: sectors from creatives to consultancy are occupants of shared space offices
- Linked to rise of entrepreneurship and self-employment following GFC
- Focus on innovation, collaboration and community

New Business Locations
Case Study: MESH, Oslo

- Opened in 2012 in downtown Oslo
- Oslo's main hub for tech-oriented activities
- A 3100 m2 innovation platform, co-working and event space which aims to connect and accelerate Norway's startup scene
- Hosts around 150 companies, mainly working in tech & design

- Use of shared working space, and flexible use of real estate e.g. a public café which doubles as a meeting room or networking space – can help lower setup costs for entrepreneurs
- Allows start ups to occupy prime locations



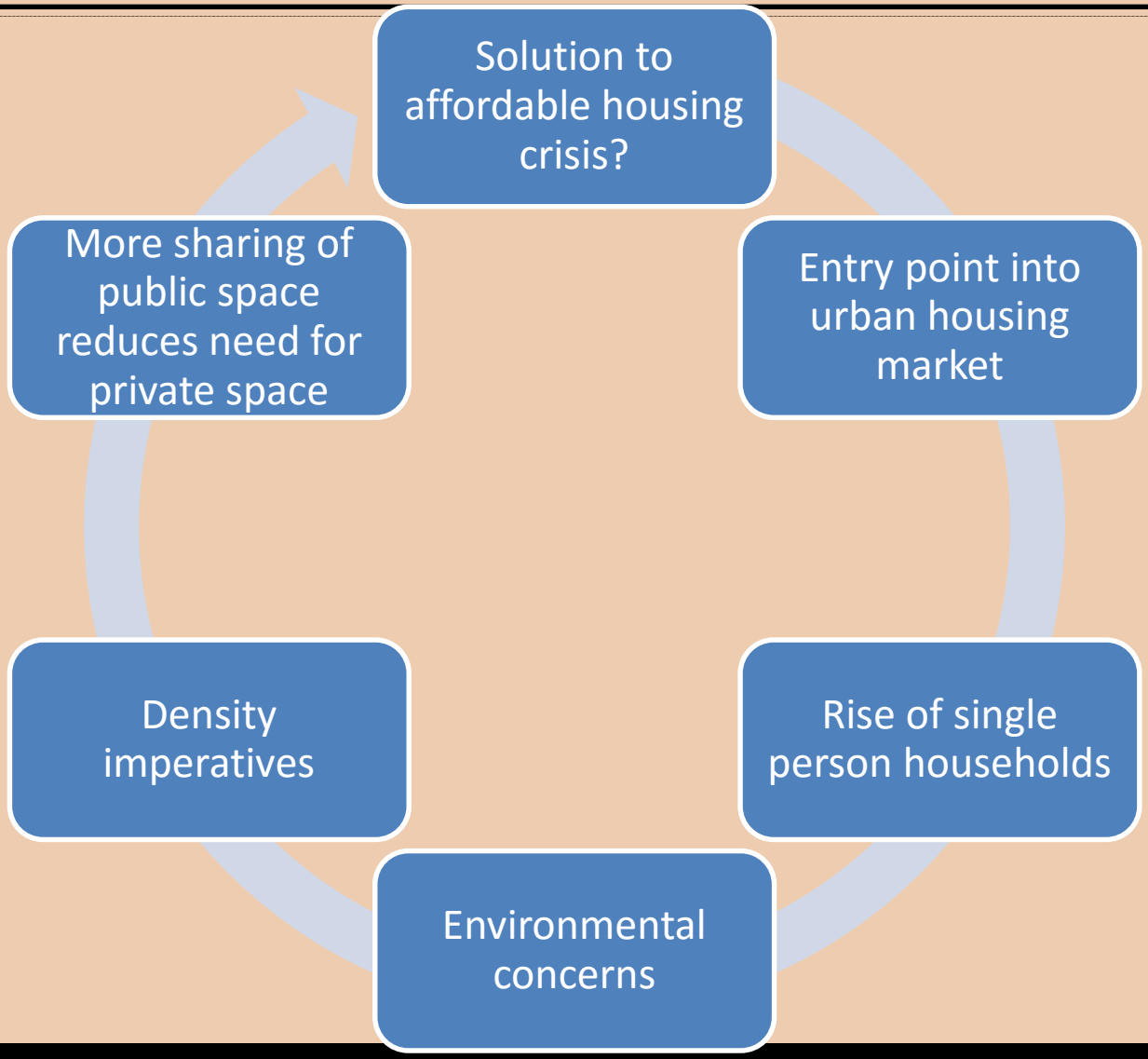
Innovation districts

- Key spatial form of the innovation economy
- Companies of different sizes cluster and connect with other start-ups, incubators and accelerators.
- Have emerged in at least 50 cities globally over the past two decades

  e.g. Barcelona, Berlin, Boston, London, Seoul and Stockholm.
- Can take several different forms:

Anchor Plus	Re-imagined urban areas
Urbanising Science Parks	Downtown start up hubs

2. Micro-housing



Case Study: adAPT NYC

- 2012 competition launched by Mayor Bloomberg to encourage one and two person housing construction
- *My Micro NY* was winning project: 55 units ranging from 23 to 35 square metres in size
- First micro-unit apartment building in New York
- Planning regulations relaxed to allow for a smaller minimum size of apartment
- Emphasis on community, making up for the small units with more public amenities within the building: a gym, small lounge, roof terrace, bicycle storage and a garden.
- Focus on quality and livability through use of space, light and air

3. Super Mixed Use

Case Study: Comcast Innovation and Technology Centre, Philadelphia

- 59 Storey building containing:
  - 45 floors of office space,
  - 3 TV studios
  - 200 room Four Seasons hotel
  - A retail mall
  - A top floor panoramic restaurant
  - Parking garage

- Designed by Norman Foster
- Tallest building in US outside of NYC and Chicago, with a footprint covering an entire block
- Cost of $1.2bn
- To be completed in 2017

4. Transport Hubs

Case Study: Dongdaegu Station, Daegu, South Korea

- Existing KTX (high speed rail station) at Dongdaegu constructed in 1969
- Now expanding into a **multi-modal transit station** integrating train, bus and underground systems
- 1 million sq. feet '**overbuild**' of retail and entertainment, over 8 floors.
- Includes a department store, sports facilities, a cinema, a water park, an aquarium and a convention center.
- Office and hotel buildings at rear
- The center will play a major role in the development of the city, bringing together transportation, culture and business.

5. Schools as Anchors

Case Study: Oslo Cancer Cluster Innovation Park

- Opened August 2015.
- Clustered around
  - Ullern High School.
  - Norwegian Radium Hospital, a field leader
  - Institute of Cancer Research at Oslo University Hospital
- Ullern High built in 1900,but demolished and rebuilt to enable formation of the Cancer Cluster.
- Cluster aims to bring the whole value chain of oncology, from basic research to industry, together in one location.
- Home to labs, offices, research departments and biobanks
- Strong links between the school and the R&D – aiming to “educate the researchers and entrepreneurs of tomorrow”

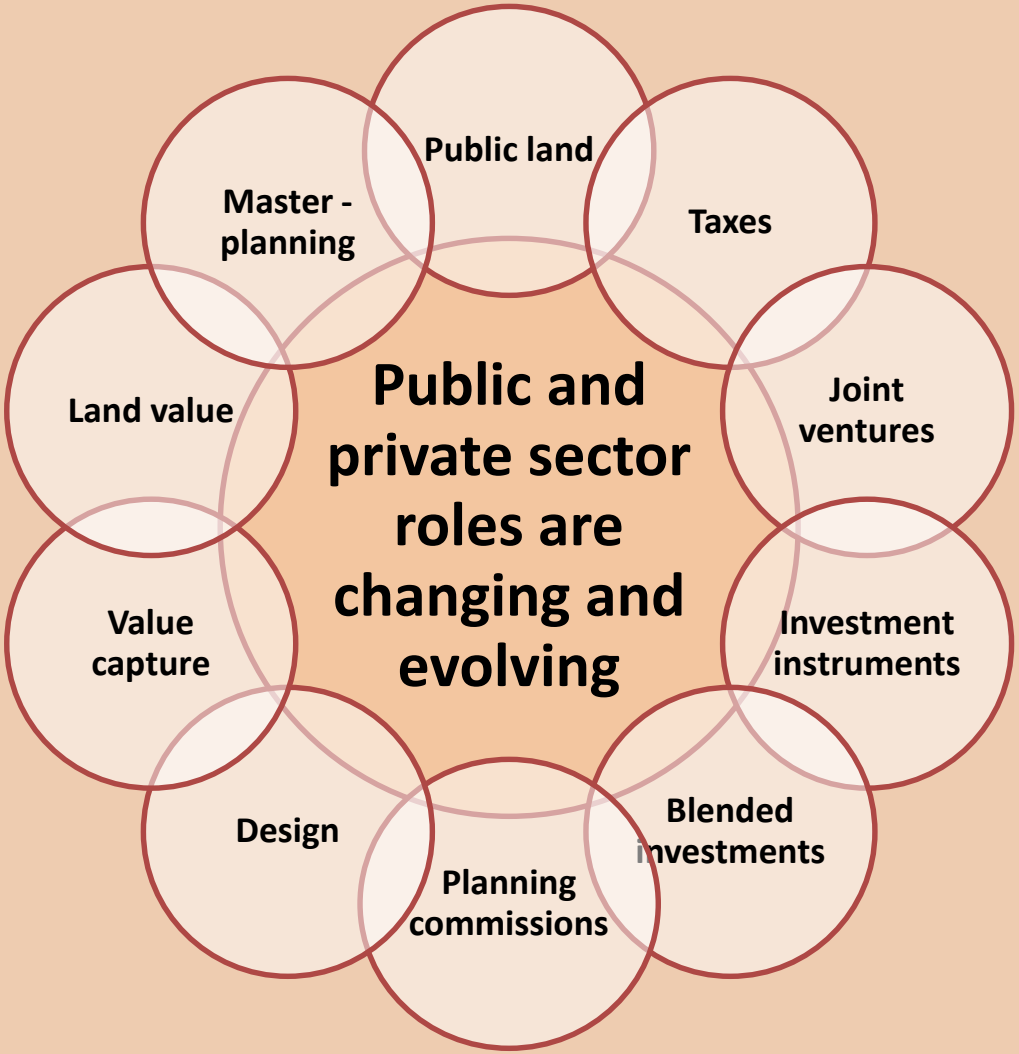
6. Intensified Use of Public Space

- Increasing recognition of importance of public space for placemaking and liveability
- Follows thinking of urbanists from Jane Jacobs to Jans Gehl
- Renewed focus on human scale, walkability, safety (including for children), vibrancy, vitality and 24 hour usability
- Explosion of street life – markets, festivals, food stalls, street entertainers
- Reclamation of urban waterways, enhancing street lighting, improved security in parks
- Experiments in **Shared Space**: traffic calming through blurring of pedestrian and vehicle boundaries e.g. Exhibition Road, South Kensington
- Accessible and enjoyable public space a necessary component of 'good' densification

Case Study: Granary Square, Kings Cross

- Extensive use of **water**: over 1000 choreographed fountains
- Square surrounded by **historic buildings** housing educational institutes (Central St Martins), restaurants and cafes
- Integration of **canal** into the public sphere
- Food **markets** and ‘pop ups’
- Public **seating** – carpeted steps and deckchairs in summer
- Regular **art** installations on canalside steps
- Hosts public **events** eg music festivals, outdoor cinema in summer

7. A new generation of PPPs



Case study: Hafen City, Hamburg

- Europe's largest inner-city redevelopment zone
- 40% extension to existing Hamburg CBD
- 6,000 homes and more than 45,000 jobs
- 10.5 km of new waterfront
- 26 hectares public parks and spaces

Funding Mechanism:

Lend against 'City and Port' fund a public sector loan rates to finance infrastructure (EUR 750 million) (10%)

Sale of land as freehold to repay loans

1. Initial 'City and Port' fund established

2. Stream of land donated to the fund by municipality free of charge

3. Grants from Hamburg government ministries (EUR 1.13 billion excluding 'City and Port' Fund Contributions) (15%)

4. Private sector investment leveraged (EUR 5 - 5.5 billion) (75%)

7 new ways to live in cities

i. Innovation space
ii. Micro Housing
iii. Super mixed use
iv. Transport hubs
v. Schools as anchors
vi. Public space
vii. New generation of PPPs

Opportunity for Europe….. Are we ready?