



MILTON KEYNES: HOW WE MADE OUR CITY SMARTER

Alan Fletcher

Knowledge Media Institute

The Open University UK

September 2016



Where is Milton Keynes?



Milton Keynes is in North East England and has been the most from London and just a few hours away.
 It is a city with a population of 100,000, and is the largest city in the Midlands.
 It is a city with a population of 100,000, and is the largest city in the Midlands.
 It is a city with a population of 100,000, and is the largest city in the Midlands.



London: 88 km

Oxford: 74 km

Cambridge: 77 km

Birmingham: 110 km

90 minutes drive
= 18 million people



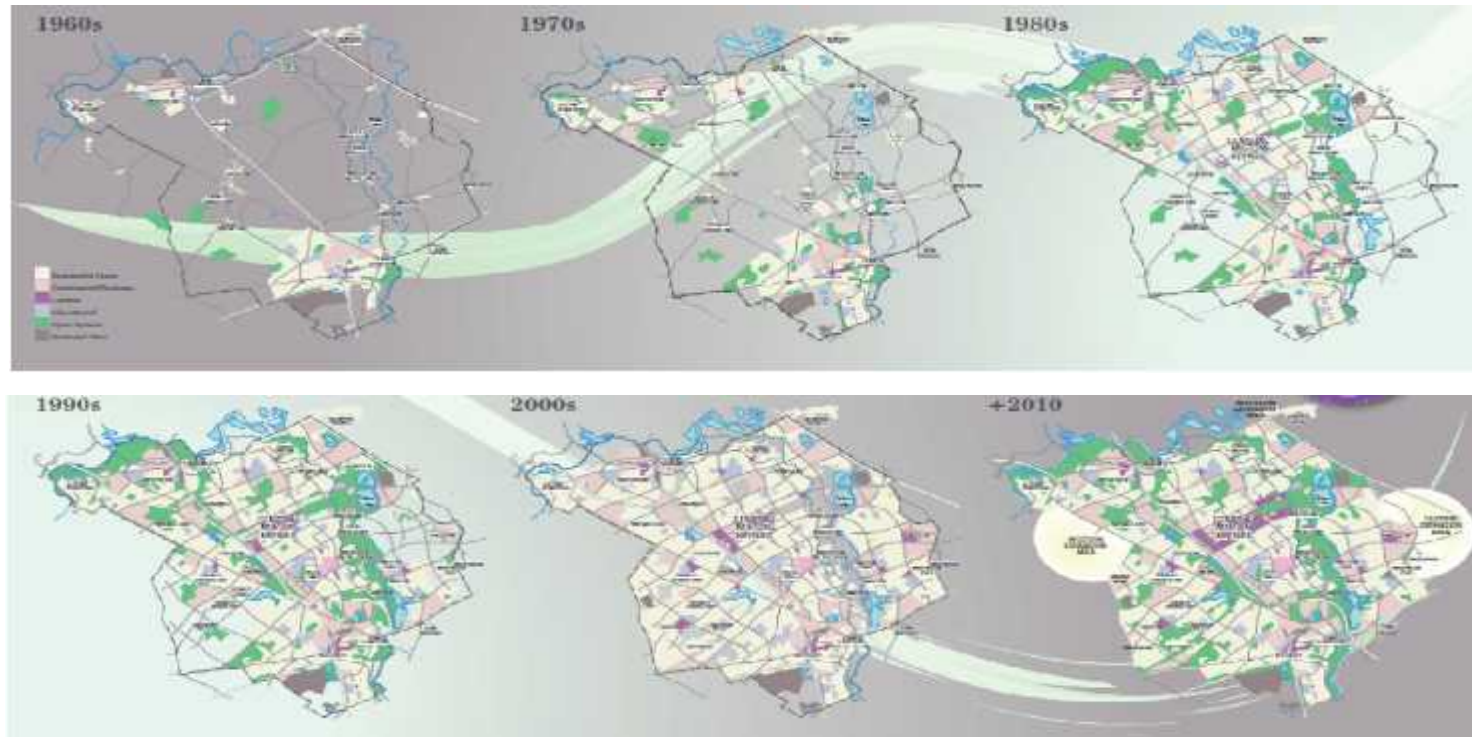




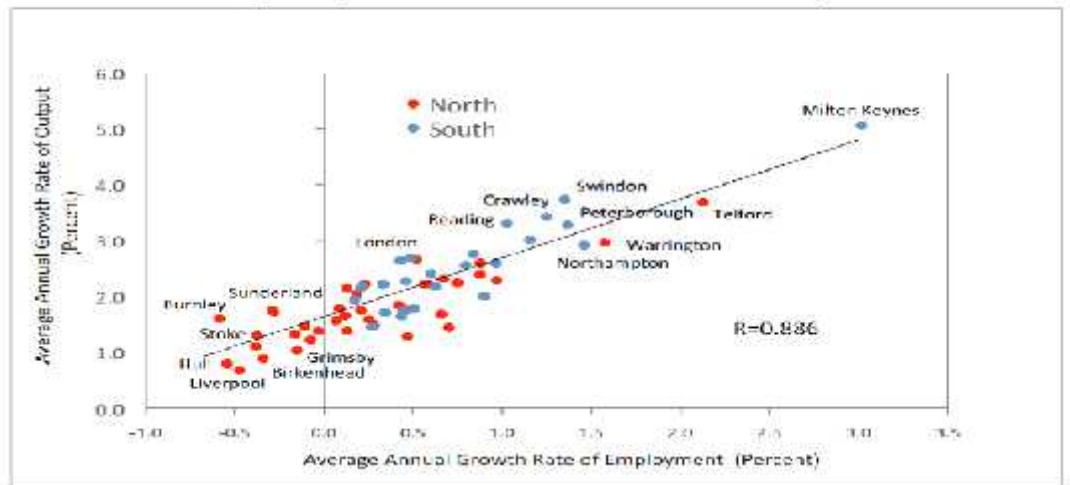








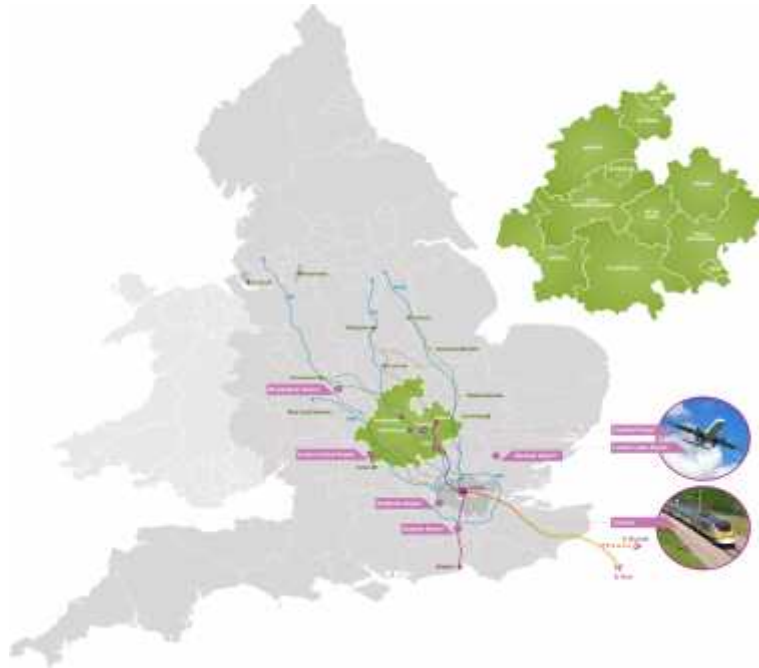
Figure 2.3: Relationship between output growth and employment growth across British cities, classified into north and south: (Average Annual Growth Rates for 1981-2011)



	City	Change 04-13	% change 04-13
1	Milton Keynes	24,400	18.2%
2	London	769,500	17.1%
3	Cambridge	12,400	15.7%
4	Brighton	15,100	11.1%
5	Bournemouth	15,500	10.0%
6	Portsmouth	18,800	9.2%
7	Coventry	11,800	8.4%
8	Newcastle	29,300	8.0%
9	Aberdeen	13,300	7.9%
10	Nottingham	21,400	7.7%

Growth in Jobs 2004-13
 Cities Outlook 2015
 Centre for Cities

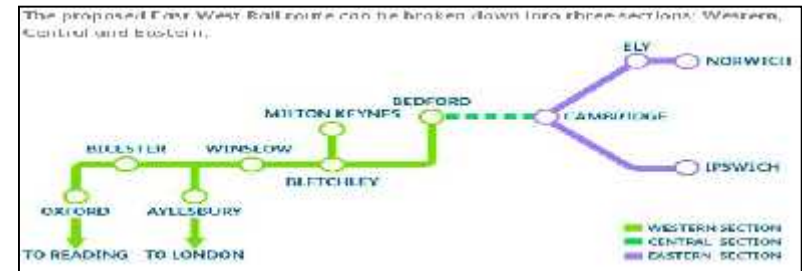
The evolving economic performance of UK cities: city growth patterns 1981-2011, Foresight Future of Cities: working paper , August 2014



SEMLEP Functional Economic Area - inter-related urban economies with their rural hinterlands



Oxford - Cambridge - London Innovation Triangle



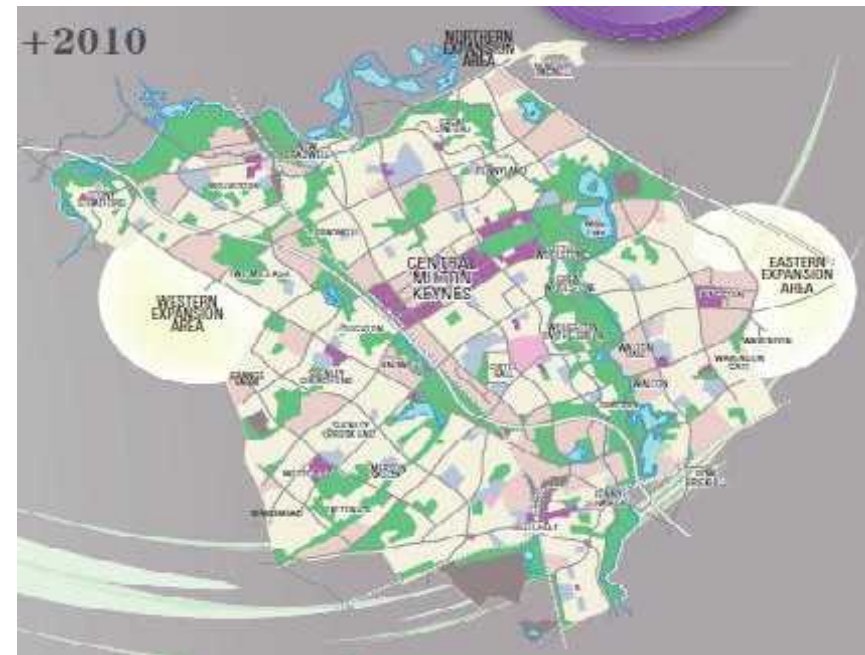
East-West Rail corridor

- 28,000 new homes
- 1.5 jobs per home
- Population grows to 300,000+

Travel demand increase of 60%

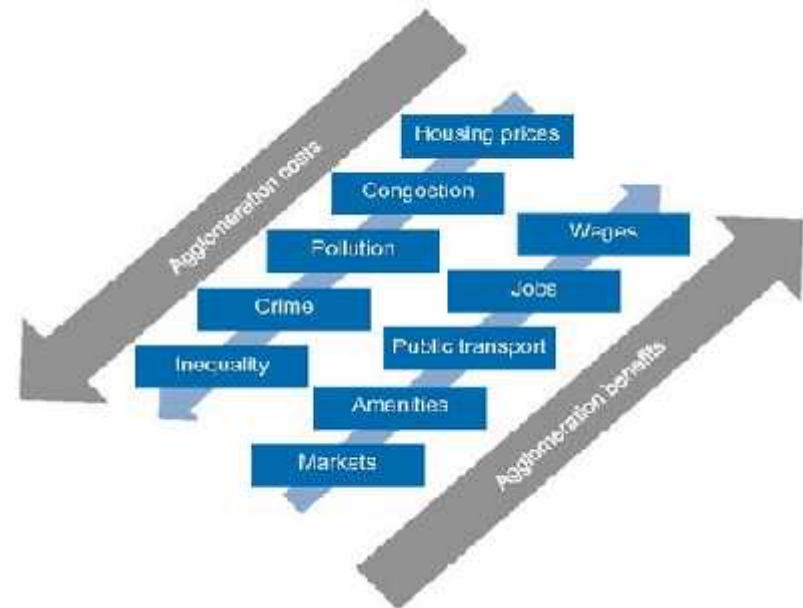
but

practical capacity improvements
address only 25% increase



Reduce carbon emissions per person by 40% (2010 – 2020)

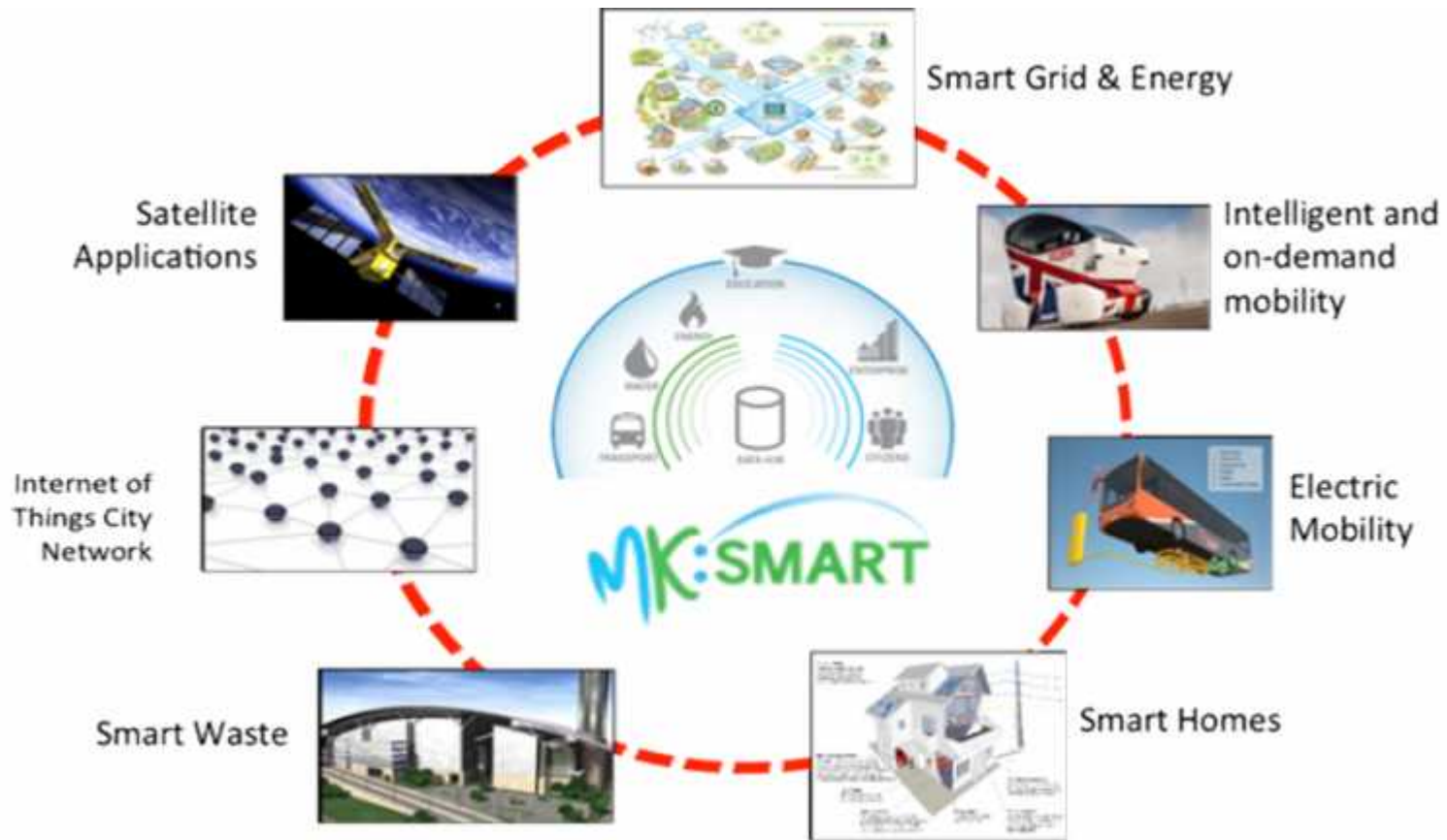
- Address barriers to sustainable housing and jobs growth
 - manage infrastructure pressures
 - create new service models
 - reduce carbon emissions
- Improve the lives of citizens
 - responsive/bespoke services
 - engaged citizens
 - education and skills
- Build leadership in urban innovation
 - foster innovation & business growth
 - attract investment
 - enhance reputation

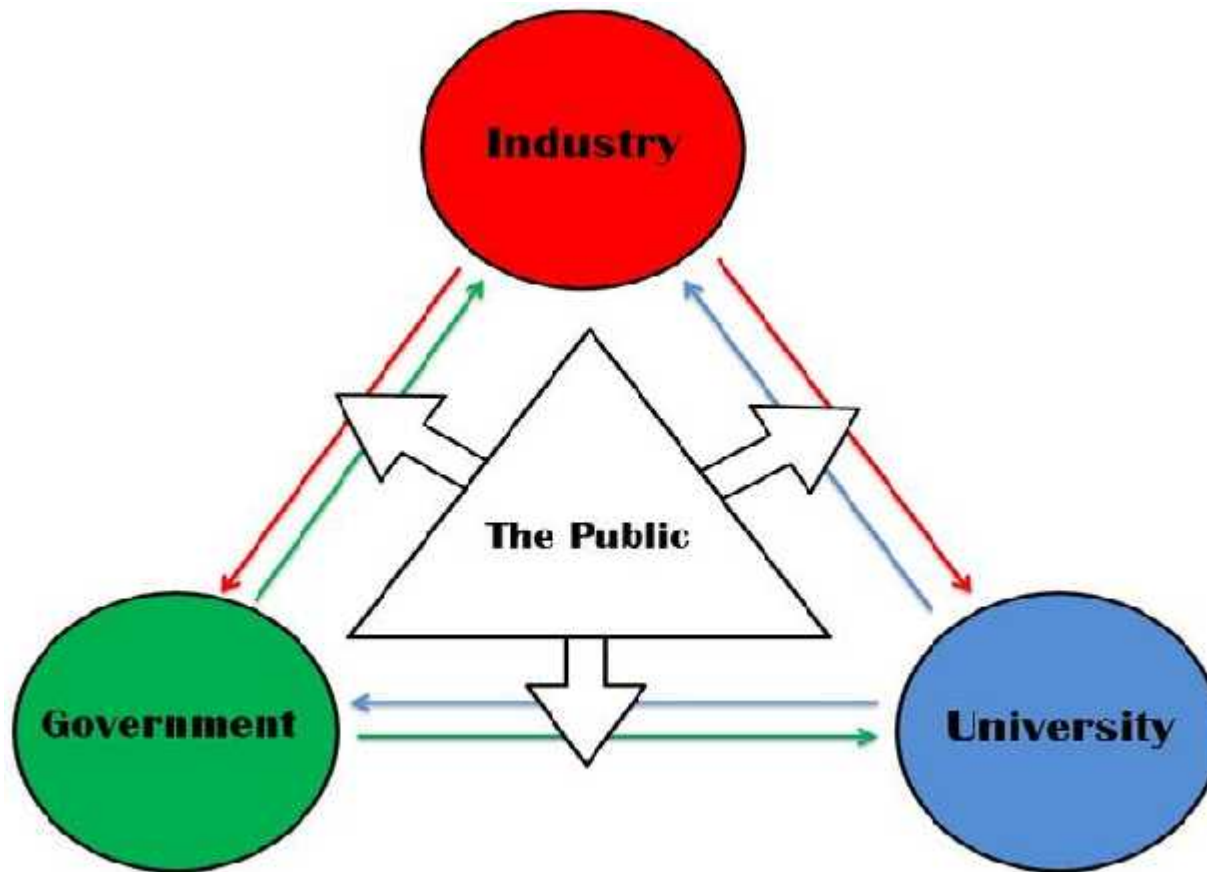


The Metropolitan Century , OECD, February 2015



Milton Keynes Future City Innovation Cluster







Helping to secure the future economic growth of Milton Keynes

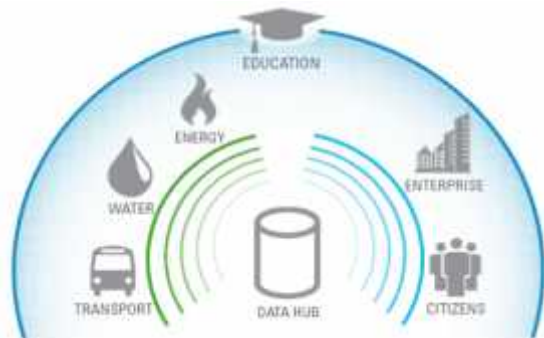
- £16m project, funded jointly by HEFCE and project partners
- Integrated innovation and support programme to ensure that the capability for growth of Milton Keynes is not compromised



Milton Keynes is one of the fastest growing cities in the UK and a great economic success story.

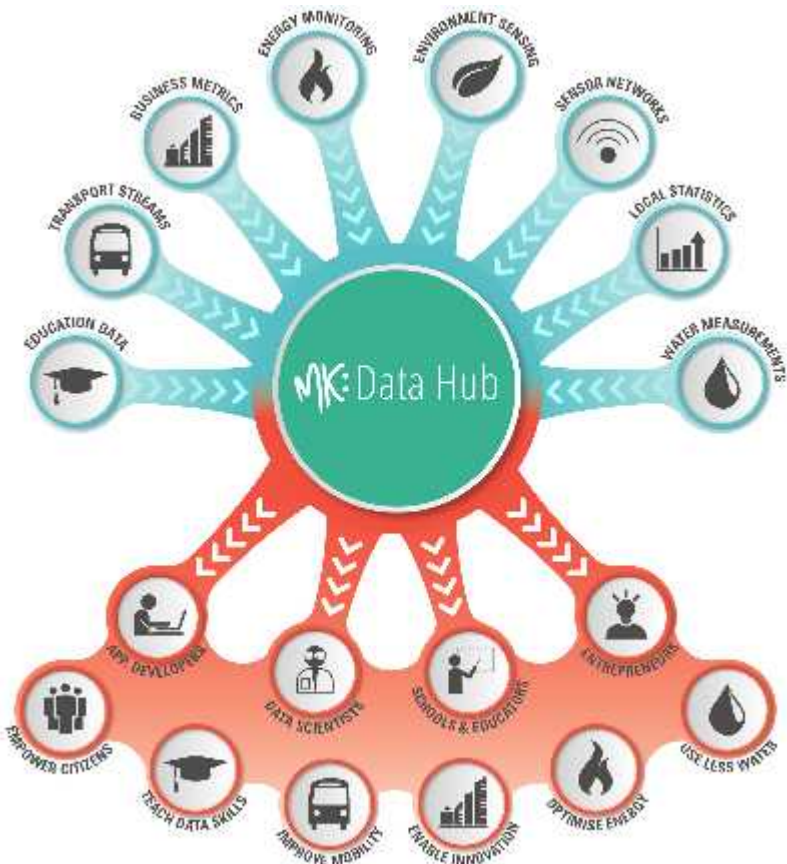
However, the challenge of supporting sustainable growth without exceeding the capacity of the infrastructure, and whilst meeting key carbon reduction targets, is a major one.

MK:Smart is a large collaborative initiative, partly funded by HEFCE (the Higher Education Funding Council for England) and led by The Open University, which will develop innovative solutions to support economic growth in Milton Keynes.



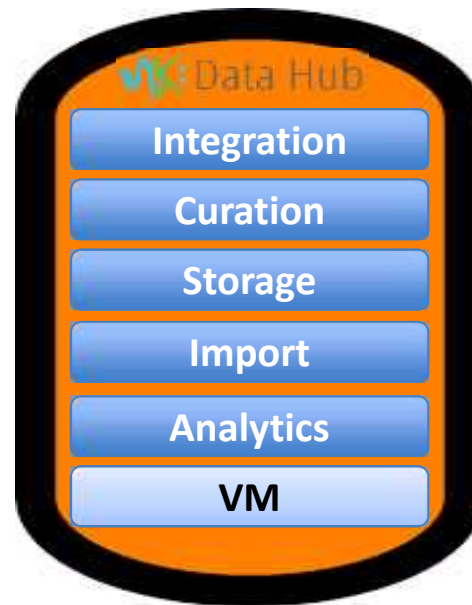
Central to the project is the creation of a state-of-the-art 'MK Data Hub' which will support the acquisition and management of vast amounts of data relevant to city systems from a variety of data sources. These will include data about energy and water consumption, transport data, data acquired through satellite technology, social and economic datasets, and crowdsourced data from social media or specialised apps.

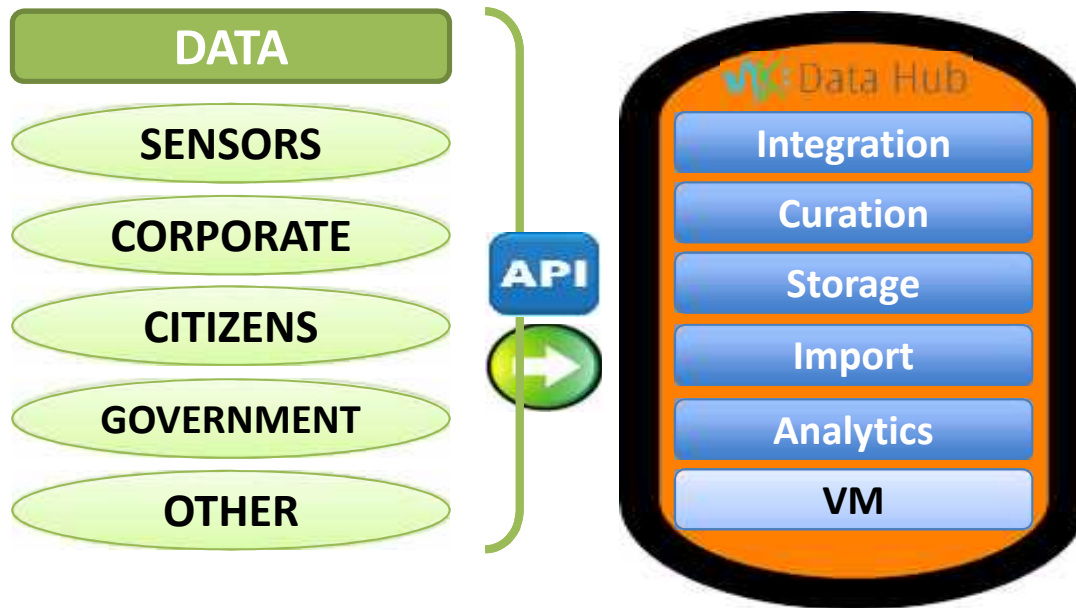
Building on the capability provided by the MK Data Hub, the project will innovate in the areas of transport, energy and water management, tackling key demand issues.

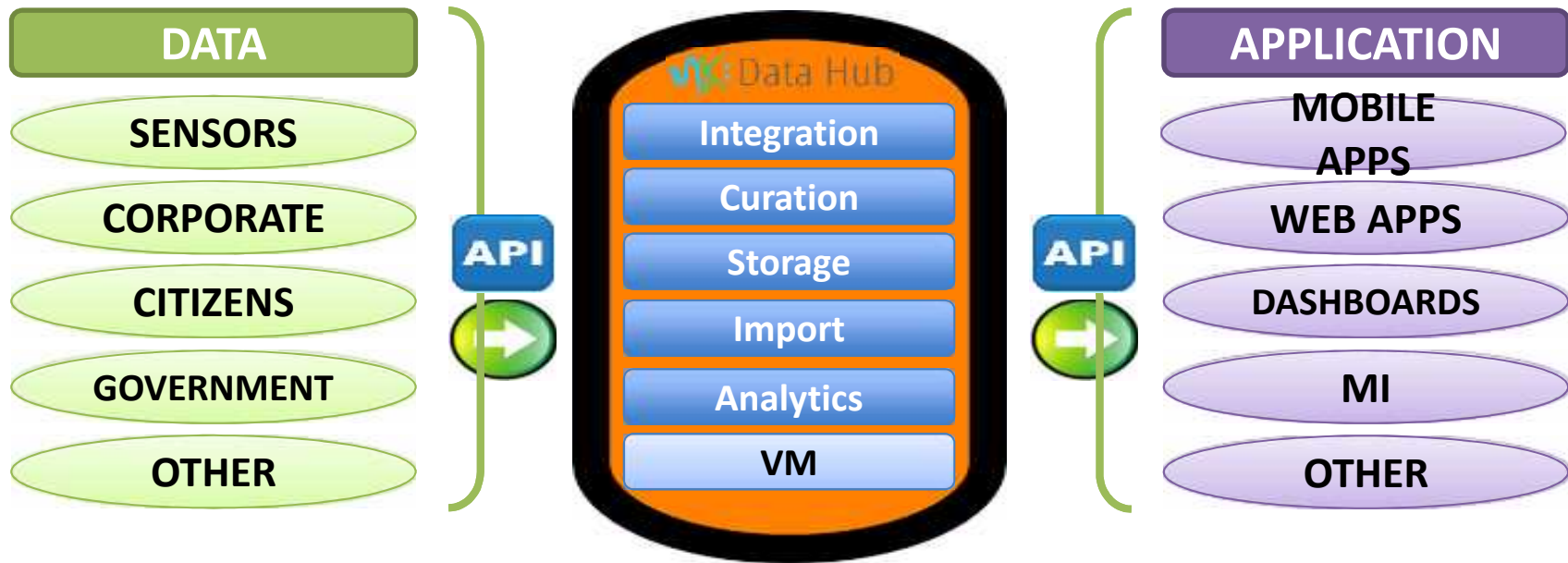


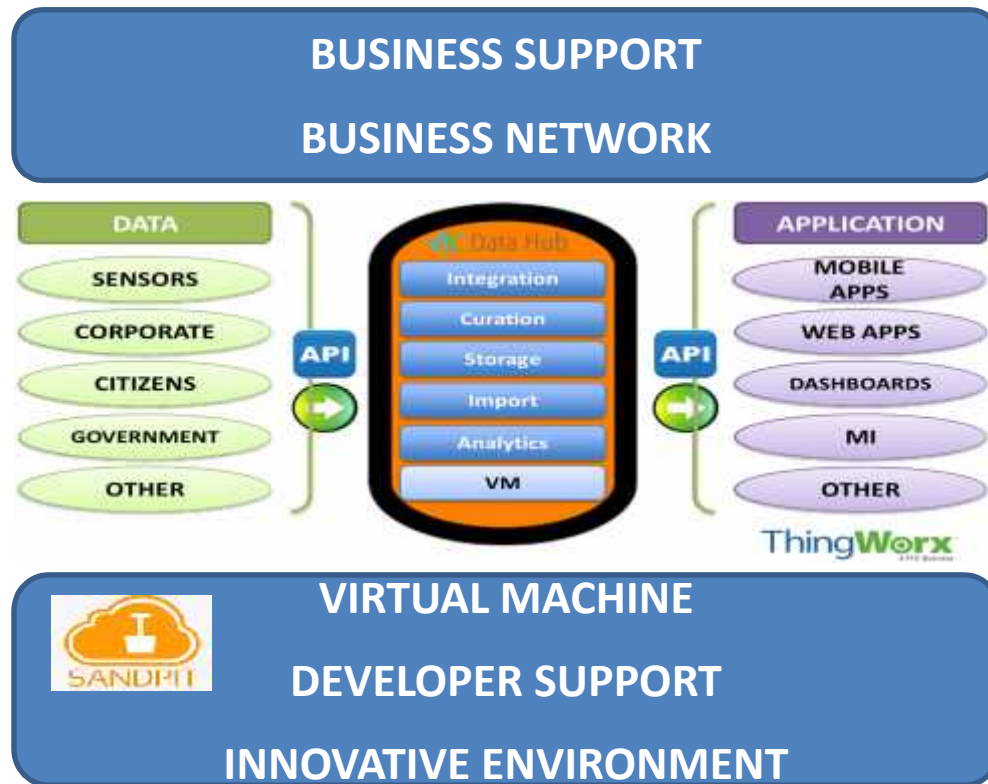
Data will drive analytics at different levels of granularity to support intelligent planning and usage of resources across city systems

Innovative solutions will be realised to reduce the cost of data-driven application development





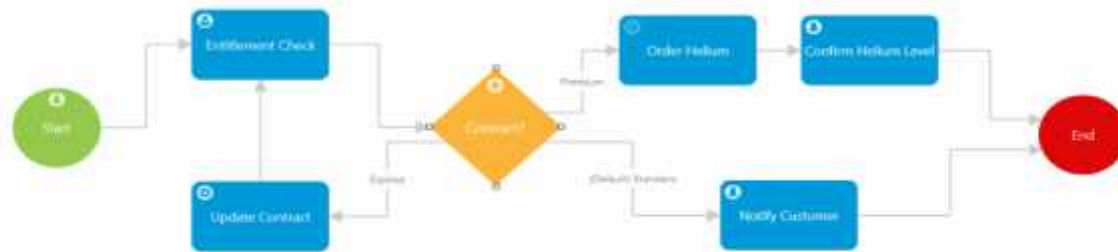






RECEIVE TASK
SERVICE TASK
USER TASK
EXCLUSIVE GATEWAY

Customer Helium Registration with Loopback



Contract

Information

Conditions

Connect the Gateway shape to at least two task steps. Enter the appropriate information for Sequence and Label, and use the Expression Builder to create new expressions.

GATEWAY CONDITIONS

SEQUENCE	LABEL	EXPRESSION	TO	DEFAULT	
1	Special	customer.contract.type == null	Update Contract	<input type="checkbox"/>	X
2	Premium	customer.contract.type == "premium"	Order Helium	<input type="checkbox"/>	X
3	Standard	customer.contract.type != "premium"	Notify Customer	<input checked="" type="checkbox"/>	X

Applications

Top MK

Top MK is a virtual card playing game where each card represents a ward in Milton Keynes, with characteristics such as area, population, level of qualifications, etc. Two players, one human and the other automatic, try to win the other's cards by choosing the characteristic that has the best chance to win against the other card. Besides being fun, Top MK is a way to introduce elements of manipulating city data in a playful way: Understanding the different areas, thinking about the distribution of values for the different characteristics, etc. It also demonstrates how the MK Data Hub helps in building interesting applications with very little resource.



Water Monitor

Water Monitor is a website (currently in development) that helps Milton Keynes citizens to understand their domestic water usage and provides advice on how to reduce water consumption. By registering to use Water Monitor, MK citizens will be able to log on and view their household's water use data. It is run from a the MK Data Hub to provide consumers with information on their water use. Milton Keynes is in one of the driest regions of the UK, which makes it all the more important to manage its water resources sustainably.



Garden Monitor



Top MK

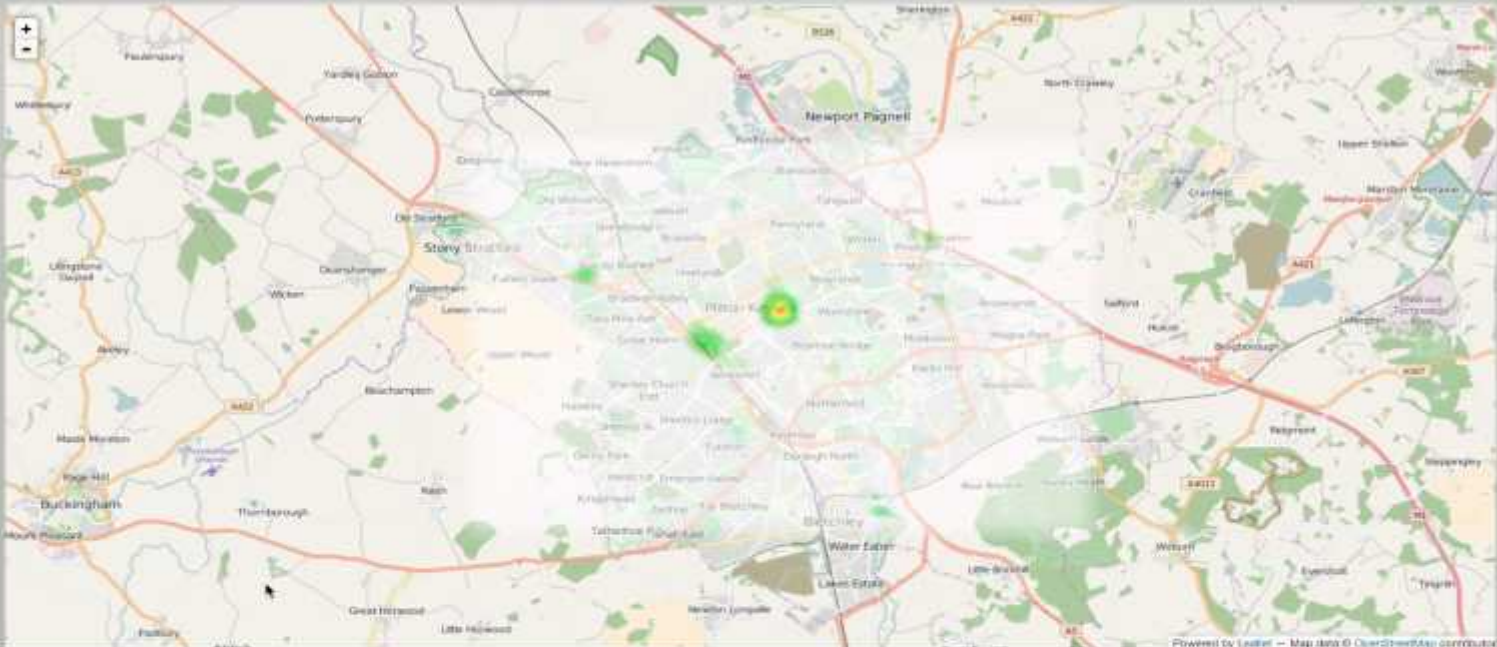
 Data Hub

??

Top MK

 Data Hub

??



Powered by Leaflet - Map data © OpenStreetMap contributors



Monday, 0h - 3h



ThingWorx
A PTC Business





Motion Map



water monitor

Milton Keynes is leading the way in the country

Find out how about making sure there is enough water for wildlife...

Welcome to MK:Smart Water Monitor

Water Monitor is a tool to help you monitor your water use. You can **save** with us to help protect the environment.

By registering on our Water Monitor app you will be able to compare your business' water use data. You'll get the opportunity to see how low it is, you can save on energy costs and help avoid a reduction in your water use. So why wait? Join us today, save money, and help the environment too.

Water Monitoring

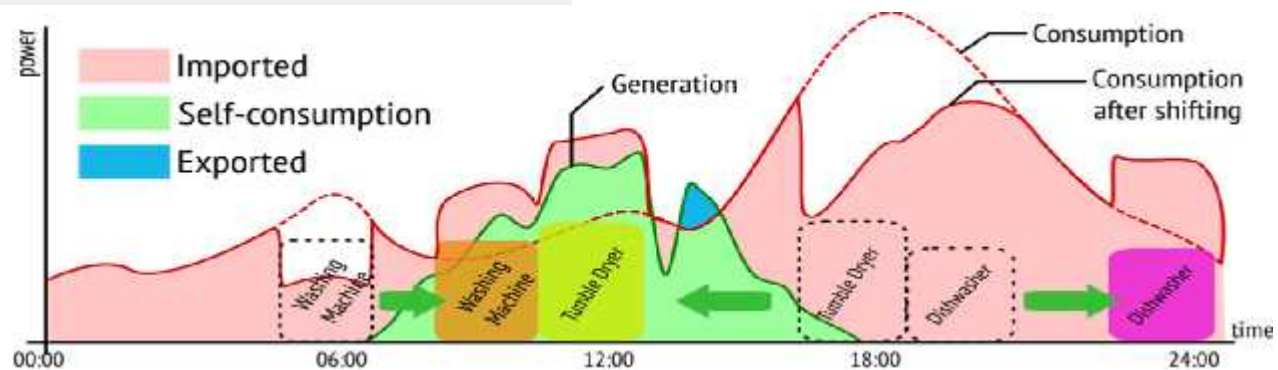
WELCOME | Samsung

SAMSUNG

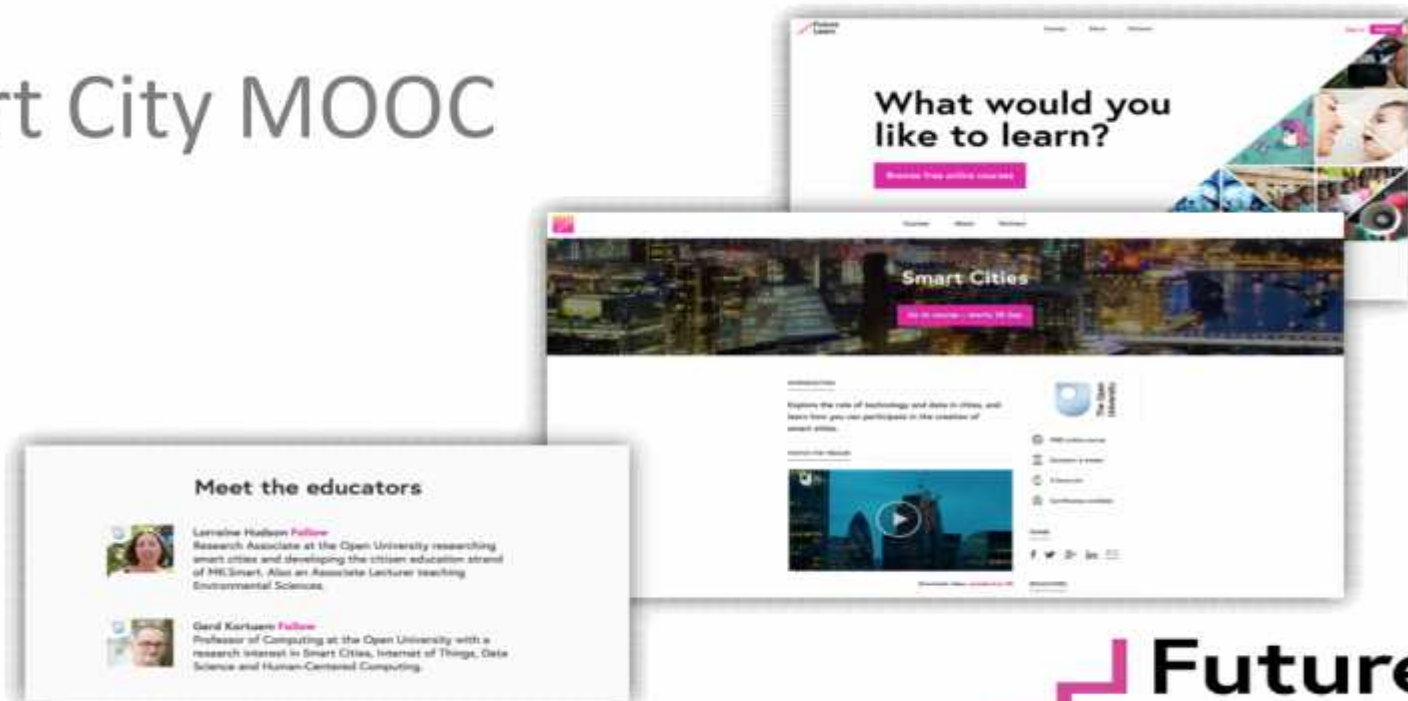
Prizes to be won
 To be in with a chance of winning top of the range Samsung Appliances, including a 100% rebate energy trial

Samsung is running an energy trial in Milton Keynes and only 90 households will be selected to take part. These people will have the chance to win a top-of-the-range Samsung appliance or TV (amongst many other rewards). You can take part as an individual household, or increase your chances of winning by inviting friends and family (only one application per household).

Energy Use Load Balance



Smart City MOOC



Citizen Platforms





Physical space

CPD events

New Enterprise Creation PGCert

Connecting Local
Tech Enterprises



BIZTECH
BUSINESS AND TECHNOLOGY FORUM

- Daga E., Adamou A., d'Aquin M. and Motta M. (2016). Towards high quality data catalogues: addressing exploitability. Submitted to the Semantic Web Journal
- d'Aquin, M., Davies, J. and Motta, E. (2015) Smart Cities' Data: Challenges and Opportunities for Semantic Technologies, IEEE Internet Computing, November/December 2015
- Daga, E., d'Aquin, M., Gangemi, A. and Motta, E. (2015) Propagation of Policies in Rich Data Flows, 8th International Conference on Knowledge Capture (K-CAP 2015), Palisades, NY, USA
- Daga, E., d'Aquin, M., Motta, E. and Gangemi, A. (2015) A Bottom-Up Approach for Licences Classification and Selection, International Workshop on Legal Domain And Semantic Web Applications (LeDA-SWAn 2015) at 12th Extended Semantic Web Conference (ESWC 2015)
- Adamou, A. and d'Aquin, M. (2015) On Requirements for Federated Data Integration as a Compilation Process, 2nd International Workshop on Dataset PROFiling and fEderated Search for Linked Data (PROFILES '15) at 12th European Semantic Web Conference (ESWC 2015)
- d'Aquin, M., Adamou, A., Daga, E., Liu, S., Thomas, K. and Motta, E. (2014) Dealing with Diversity in a Smart-City Datahub, 5th Workshop on Semantics for Smarter Cities at the International Semantic Web Conference (ISWC 2014)