From Service to Data Infrastructure - The Transition from MK Intelligence Observatory to MK:Insight

Other

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The Transition from MK Intelligence Observatory to MK:Insight

Version: 1.2
Last Update: November 27th 2018
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This work is based on the analysis of public and internal reports, interviews, and data practices concerning the initiatives and platforms for the management of Milton Keynes Open Data from 2004 to 2018. This report analyses in particular the transition from the MK Intelligence Observatory (MKiO), providing data services through an Intelligence Team, to the setup of MK:Insight (MKI), the smart city data portal of Milton Keynes, providing direct access to datasets and reports.

The background of this case study is intertwined with national and global milestones that changed the framing of the concepts of open data, open government and the role of the technologies in this context over time. Here, we outline an overview of where and how open data, open government and data technologies began, intersected and impacted on the local data and smart strategy of Milton Keynes, resulting in the transition from MKiO to MKI.

KMi Knowledge Media Institute
The Open University

Trends and Evolution of Open Data Concepts

The term Open Data appeared for the first time in 1995 [1-2], but the concept of Open Access to scientific data was already institutionalised in 1957 [3-4]. The idea of openness associated to research data was intended to support the exchange of data across the scientific community for facilitating the verification and reproducibility of scientific results, as well the integration of many sources to produce new knowledge. In this vision, data bring an intrinsic value for understanding and addressing research problems, as a corollary of common scientific research agenda and outputs.

In 2004, the value of openness of scientific data encountered the trend of Open Government with the principle that knowledge produced by using public funds should be made publicly accessible. A joint declaration had been subscribed by the research ministries of the OECD countries [5], highlighting the political dimensions of open access to data within the framework of the Open Government. Following, a generalised shift from scientific data to government data associate the openness of data to transparency and accountability of governments and administrations [6] operating in a democratic setting. This shift moved the focus from the intrinsic value of data for generating new knowledge to the extrinsic value of data as a form of public monitoring on the activities of public bodies.

It is worth to highlight that in the scientific community the open access to data is intended to support collaboration practices among researchers and institutions, while in the context of open government opening the access to data is aimed to fulfil the principle of transparency toward citizens. Moreover, the nature of data in scientific domains refers to experimental and sensors data, while in the open government data include acts, reports, census, geographical information. This implies a difference in the expected use of data and their target. On one side there is explicit use of data in a specific scientific community sharing a common knowledge base, while on the other side there are outputs of government and administrative activities not intended for further use than informing the general public.

The technological element entered in this arena applying the strong ideological vision of open knowledge, driven by the open source movement, to the forms of production and sharing of data on the web. In 2007, the concept of public open data merged with the ideas of open source movement [2] reframing open government data as web resources available for reuse and sharing by tech activists. The key features of interoperability, interconnection, exploration of web resources open new potential applications for open government data and led the vision of open data accessibility as an enabler for local development.

As open government data were introduced in the websphere become an object in a cooperative environment of contents creation. The use of open government data by experts in data manipulation decoupled into the web in the communication of insights from data by journalists and activists, and development of web applications and data exploration and visualisation tools.

Between 2008 and 2009 with the two large programs of IBM and CISCO about Smart City, for the first time governments have the availability of large amount of data having the properties of scientific data, reliability, veracity, objective and covering many new domains beside administrative activities. Data become strongly connected to the strategy for local development and resource

management. In this context, open data become absorbed in this vision and framed as resources business, third sector organisations, public agencies and local communities. On the other hand, the production of open data become marginalised as partially in conflict with the new data-related services and revenues associated with these new smart city technologies.

It is worth notice that the introduction of smart city initiatives enhanced the capability of producing data at local scale through ad hoc technological solutions, in parallel to a general trend investing open data pointing toward the standardisation and interoperability at the national and transnational level.

The marginal application of smart city data and open data despite the considerable investment in their production is in deep contrast with the growing awareness on the value of data and informed decisions, pointing to the key challenge of strategic production of data as support to the activities of local and national stakeholders.

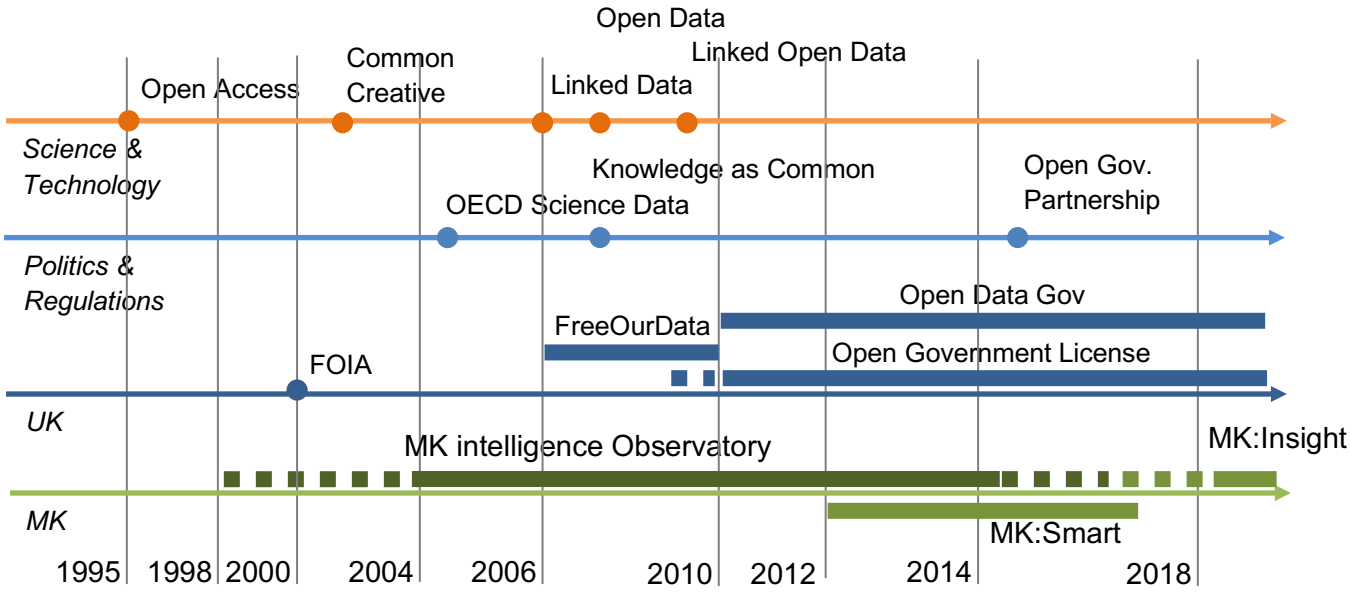

Figure 1. Evolution of Open Data and Open Government concepts with a focus on the UK and Milton Keynes specifities.

Milton Keynes Intelligence Observatory

Milton Keynes (MK) is the last of the new towns of the UK, founded in 1967 as the agglomeration of new settlements and historical boroughs such as Bletchley where the famous Bletchley Park was situated. This particular status led to a substantial commitment of the local government toward supporting and promoting innovation in public services as well as in research and industry.

Since 1998, MK council included data analysts in its staff providing support to the different sectors of the administration through the analysis of national and internal data, importing in the council state-of-the-art practices about the use of data, adopted in research institutes.

Their activities had been progressively structured to meet the new requirements of the Freedom of Information Act (FOIA) signed by the UK in 2000. This new policy brings the principles of open government in the UK local authorities, supporting the disclosure of internal acts, reports and data associated with public services.

In 2003, the MK Council established the MK Intelligence Observatory (MKiO) as a cross-department group of data analysts and other professionals dedicated to providing analysis and data elaborations.

The activities of the Intelligence Team were primarily intended to support the Council's departments by overcoming the silos separation of competences and data. Beyond that, they addressed the needs of other public agencies interacting with the MK Council and other external organisations requesting local data for their initiatives. The MKiO was a service in between internal and external users of open government data.

From 2004, the Intelligence Team had been working on public reports, which the most important was the Social Atlas [8]: a project of the MK Council aimed to build a comprehensive profile of the city by integrating multiple data sources concerning poverty, social services, education, health. The Social Atlas was an initiative grounded on the national effort toward the standardisation data about factors impacting on social fragility, resulting in the definition of the Deprivation Index [9]. The Social Atlas was an annual report and datasets, produced by MK Intelligence Team from 2004 to 2013. From 2004 to 2016, the Intelligence Team supported the dissemination of reports and new datasets by sending periodical newsletters to the registered users and to the partner organisations.

The activities of the Intelligence Team started to be supported in 2004 by a technological platform (www.mkiobservatory.org.uk) [7, 24, 25], a knowledge management system associated with a GIS and a data analysis module [23,25], see Figure 2. In 2008, the MKiO knowledge management component was migrated to Funtain, a system expanding the previous functionalities with improved search and navigation tools as well as features for collaboration, sharing and discussion [23,25]. From 2009 to 2014, the Intelligence Team organised trimestral meetings with partner organisations to discuss uses, case studies and applications of the available data, and to support the data sharing through networking [25]. In these years, the expression MKiO referred both to the services provided by the Intelligence Team and to the data platform.

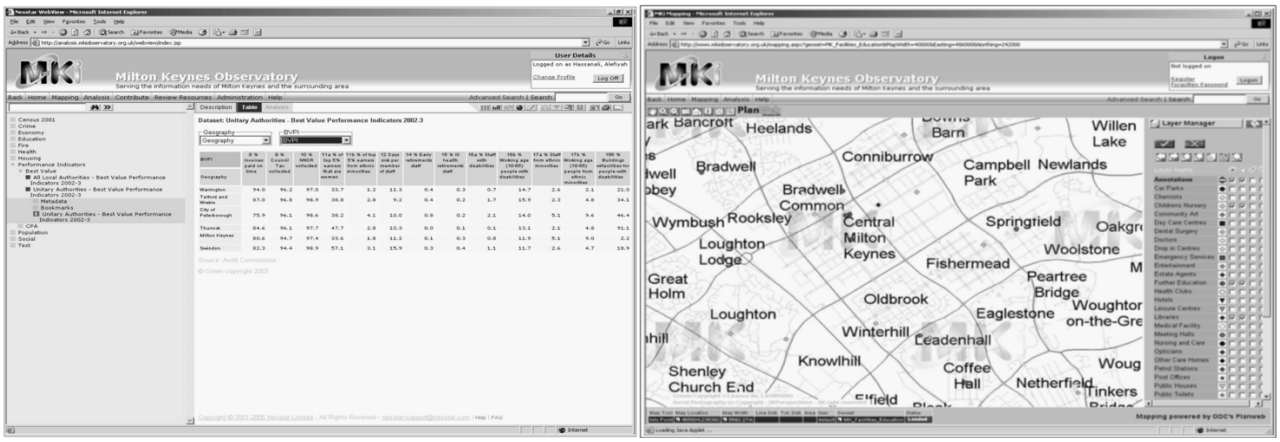

Figure 2. MKiO tabular data visualisation and web map tools.

Between 2009 - 2010, significant changes in the management of public data resulted in the definition of the Open Government License (OGL) [10] and the establishment of the national open data portal (data.gov.uk) [11]. Under the pressure of The Guardian campaign "Free Our Data" started in 2006, bring to the public discourse the importance of accessing to government data as

product of taxpayers' money: "government-funded and approved agencies such as the Ordnance Survey and UK Hydrographic Office and Highways Agency are government-owned agencies; they collect data on our behalf. So why can't we get at that data as easily..." [12]. Indeed, the discourse on open data had been supported considering on one side citizens and their rights to access to public founded data, and on the other side, the lawsuits issued to the antitrust against the government-funded agencies that charged business for access to data of national relevance, such as geographical data and transport data.

At the national level, the two arguments against the former management of the UK data were driven respectively by political and economic motivations. The national open data portal met the political instances, while the release as open data of medium-scale datasets tried to address the businesses needs. Conversely, in Milton Keynes, the Intelligence Team's effort was focused on supporting the local administration and agencies in the management of public services. As regarding the business sector, the MKiO's activities were oriented to support cooperation between local stakeholders and the MK council.

In 2010, the critical difference in the approaches to open data was that at the national level the emphasis was on releasing and publishing data, while in the context of MK the provision to data to local stakeholders was framed within the services provided by the MKiO through analysis and tailoring of data under the light of local needs and challenges. Therefore, publishing open data in MK was one of the outputs of multi-actor processes, participated by the local government, the MK Intelligence Team, other agencies, non-profit and business.

On the technological side, the MKiO was using the city open data portal as a support tool in the provision of their services. At the global level, a technological shift and the introduction of new paradigms such as Linked Data and Semantic Web was pushing toward technologies enabling end-users in being autonomous in data retrieval, exploration, visualisation and integration, that were tasks performed case by case by the Intelligence Team in the context of MK.

From the MKiO to MK Insight

The situation started to change in 2012 when MK made its step into the smart city vision with a five years program called MK:Smart [13]. This program included important investments in a new ICT infrastructure for the production and management of urban data from sensors and open data [14]. The MK:Smart program was intended to realign MK with the global and national technological and operational trends on open data.

During the development of MK:Smart infrastructure, the MKiO services had been progressively reorganised, reduced and finally closed between 2015 and 2016. In 2017, the MK Council and the Open University jointly drove the transition from the team-based service of the MKiO to a technological-centred service of the MK Insight portal, officially launched in March 2018, see Figure 3. This new portal gathered the data and reports produced by the intelligence team providing support for thematic exploration of data to end-users, similarly to the national open data portal, and self-publishing tools available for the MK Council departments.

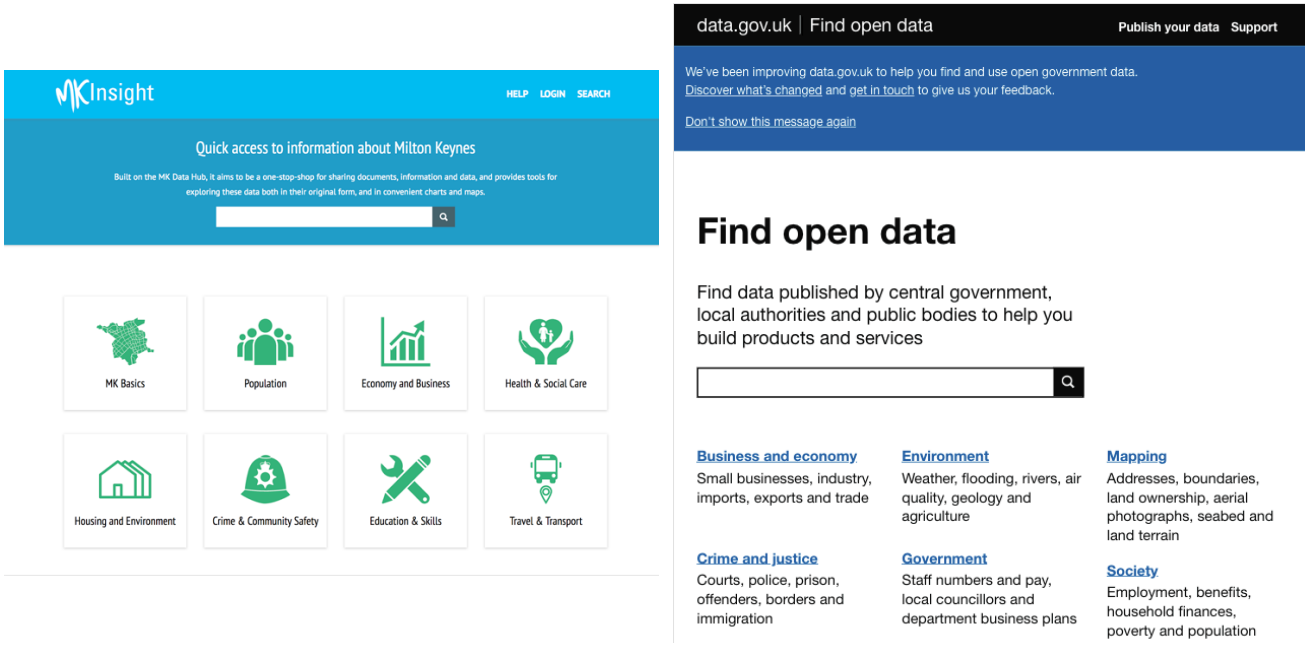

Figure 3. MK Insight home page follows as similar approach used for Data.Gov.UK.

From 2010 to 2018, Milton Keynes moved from an intelligence service to a web-tool for data discovery, and from a centralised unit operating for the MK Council to the idea of a distributed effort of distinct departments supported by technology.

In eight months of activities, MK Insight was visited by less than 5000 times, mostly concerning the basic statistics presented in the home page, and the top two searched words are still “milton keynes observatory” and “mki observatory”. Since the launch of the portal, there are still not new contents published or new users from the MK Council departments, yet to realise the replacement of the centralised management of city data with the distributed technology-supported approach.

Conclusions

The reports of the past activities of the MKiO highlighted how the global and national trends impacted on the management of data at the city scale in Milton Keynes. In particular, a complex service of data analysis and tailoring provided by a group of data experts interacting with local stakeholders and with a technological platform supporting their activities, had been progressively replaced by an open data portal to make data available for public uses. This transition did not met the expectations resulting in a limited use of the current portal by both end-users and Council officers.

This path is coherent with the general trends and issues investing open data and open data portals. The myth that publishing data would automatically resulting in their use positively impacting on local development had been denied by all major studies on the non-use of open data [15-16]. Recently, the focus on open data moved toward the analysis of data practices and applicative scenarios of open data for business, non-profit organisations and local government [17-22], highlighting the importance of human support to understanding and contextualisation of data to make them actionable. Therefore, the MKiO experience could be considered as a precursor of this new vision linking data resources to a data ecosystem.

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