# Smart Cities, Smart Libraries, and Smart Librarians

## Ian M. Johnson

Professor of Information Management, The Robert Gordon University, Aberdeen, Great Britain (i.m.johnson@rgu.ac.uk)

## Abstract

The paper notes the importance of cities in economic and social development. It discusses the characteristics of ‘smart cities’ and some of the roles that libraries and information services may contribute to their development. It points to the need for ‘smart librarians’ in all libraries, and emphasises not only the high level of skills and commitment required, but also the need for them to demonstrate that libraries do make a difference and to ensure that that is well understood by the decision makers in corporations and government.

## Introduction

This short paper aims to explore some ways that ‘smart’ libraries and information services can support the development of ‘smart cities’, and also discusses the knowledge, skills, and personal attributes that ‘smart librarians’ will need. My paper is far from being an academic one, because I worked with almost no literature on the subject of ‘smart cities’. Indeed, I would have had some difficulty in doing so. A quick search revealed little in our professional press about the subject of ‘smart cities’ other than a brief references to the potential use of knowledge management, and the role of libraries as ‘learning hubs’ and access points for city e-governance services. The general literature on ‘smart cities’ makes some rather simplistic assumptions that any library that makes advanced uses of information technology is a ‘smart library.’ But technology is just a tool used in delivering library and information services. This short paper offers a different perspective. It is intended to provoke a discussion of the wider role that libraries could contribute to the development of ‘smart cities’, on the opportunities that may be being missed to assert that role, and steps that need to be taken to remedy the situation.

## ‘Smart’ cities in history

It is often said that, if we are to understand the future, we must first understand the past. So let’s begin, very briefly, with a few remarks about the history of cities. Since they began to be established - as far as we know that was in Mesopotamia about 8,000 years ago and in northern China 6,000 years ago - cities could always be said to have been ‘smart.’ As well as providing security against nomadic incursions, they became the focal points of the economy and society, based on their ability to bring together the human and physical resources required to turn innovations into new business ideas and commercial products, and based on the large market that they represented for many of those products. All the great civilisations of the past have been based on cities, and cities have always been the driving force in economic development.

That economic phenomenon is most easily recognised in the development over the last 200 years of major cities focused on manufacturing industries. They provided jobs for large numbers of people, many of them immigrants from rural areas where new methods were reducing the demand for workers in agriculture, and they raised the general level of prosperity in the region and in the country as a whole. However, when the major manufacturing industries began to be affected by the global changes that are taking place around us, many of those cities lost their competitive edge, and their economies declined.

## ‘Smart’ cities today

New industries are now emerging, based on the knowledge derived from the information that provides a creative force to nurture innovation. As I understand the concept of ‘smart cities’, they are those cities around the world that are now aiming, through investment in the quality of life enjoyed by their citizens, to attract those who work in these new knowledge-based industries to live and work in the cities. In doing so they expect to sustain and enhance the level of economic activity.

## Characteristics of ‘smart’ cities

The next part of this paper uses as its framework the six characteristics that were recently defined in an attempt to evaluate whether medium-sized European cities were ‘smart cities.’ Those characteristics are: ‘smart’ people, ‘smart’ economy, ‘smart’ governance, ‘smart’ mobility, ‘smart’ environment, and ‘smart’ living ([www.smart-cities.eu](http://www.smart-cities.eu)). The emergence of this new focus on ‘smart cities’ offers an opportunity for libraries and information services to define their role and become integrated into these developments. To become integrated, a strategy is needed, and any strategy begins with analysis. A short paper such as this could not fully address the challenge of making a complete analysis and outlining a strategy. The results of that process would, in any case, vary from city to city. The aim here is simply to introduce some of the central questions that would be the starting point for any analysis:

* what could libraries and information services contribute to creating the characteristics of a ‘smart city’?
* how can they demonstrate that they are doing so; and
* what knowledge, skills and attitudes are required?

## Knowledge workers, the ‘smart people’

The starting point in any discussion of the development of a ‘smart’ city must be the creation or attraction of knowledge workers, the ‘smart people’, whose characteristics have been defined by the following attributes:

|  |  |  |
| --- | --- | --- |
|  | * Level of qualification
* Affinity to life-long learning
* Social and ethnic plurality
* Flexibility
* Creativity
* Cosmopolitanism/Open-mindedness
* Participation in public life
 |  |

Table 1. Characteristics of ‘smart’ people

They are not only well educated and creative, but noticeably open to new ideas, and expect to be well informed. How can library services help to keep them up to date and fully informed? Some of the answers to those questions can be found by considering the potential for interaction between libraries and information services and the other characteristics of the ‘smart city.’

## Libraries and information services for ‘smart’ cities

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ Economy* Innovative spirit
* Entrepreneurship
* Ability to transform
* Productivity
* Flexibility of labour market
* Economic image and trademarks
* International embeddedness
 |  |

Table 2. Characteristics of a ‘smart’ economy

In seeking to be a ‘smart city,’ the principal objective of a city’s government is improving the local economy through developing or attracting ‘smart people’ who will take advantage of scientific and technological advances and new business opportunities. Effective access to information could help them do so. But, diversity is a feature of the new industries, and no library can meet all their needs from its own resources, Could effective local cooperation between all types of libraries enrich the information supply about business opportunities? How could an appropriate infrastructure be developed to facilitate a collective response from all a city’s libraries and information services to the city’s wide range of social, cultural, scientific, and economic needs?

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ Mobility* Local accessibility
* (Inter-)national accessibility
* Sustainable, innovative and safe transport systems
* Availability of ICT-infrastructure
 |  |

Table 3. Characteristics of ‘smart’ mobility

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ Environment* Attraction of natural conditions
* Pollution
* Environmental protection
* Sustainable resource management
 |  |

Table 4. Characteristics of a ‘smart’ environment

The ‘smart people’ are socially and geographically mobile, and their lifestyles demand that governments ensure that the transport and telecommunications infrastructure is well planned, so that they do not perceive their physical location is a disadvantage. As part of a better educated, more concerned society, they also expect government to protect the natural environment in and around the city. How could the role of research libraries and information centres be enhanced to enable researchers, professionals and administrators in a city to access relevant current information about technological trends so that the city’s transport and telecommunication facilities match the best worldwide and so that environment is not threatened by development?

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ Governance* Public and social services
* Political strategies and perspectives
* Transparent governance
* Participation in decision-making
 |  |

Table 5. Characteristics of ‘smart’ governance

The ‘smart people’, the knowledge workers, are likely to be active participants in the public life of the community. What kind of information services are needed to keep them informed about how government is working for their benefit, and how the public services that government provides are being delivered effectively, efficiently, and economically in other cities so that they have a basis for comparison and can make a balanced judgement on local progress?

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ Living* Education facilities
* Cultural facilities
* Touristic attraction
* Health conditions
* Individual safety
* Housing quality
* Social cohesion
 |  |

Table 6. Characteristics of ‘smart’ living

A library service cannot itself provide the conditions for ‘smart living’ that the ‘smart people’ expect, but could it do more to raise awareness of the lifestyle that the city offers? Increasingly, information about all of the facilities and services that combine to create an attractive lifestyle is being presented on the World Wide Web by numerous, separate organisations, each responsible for particular features. But who, other than a library service, has any interest in developing a web portal that brings all that information together, creating links to all the web sites in a city, and making sure that it is as up to date as possible?

A library service alone will not attract ‘smart people’ to a city, but could it also contribute to the overall perception of a ‘smart’ population through the visibility of its own activities? For example, could a pro-active approach to delivering information services be developed, discovering who needs what information and taking the initiative in delivering it to them before they know it is available?

And of course, there is a life after work. Better health care has brought with it the challenge of providing services for larger population of older people. What can libraries do to contribute not only to city planners’ awareness of this challenge, but also to the implementation of concepts such as the World Health Organisation’s ‘Age-friendly cities’ (http://www.who.int/ageing/publications/Age\_friendly\_cities\_checklist.pdf)? What can public libraries contribute, in addition to a public space that functions as a social hub for the elderly, or through the provision of community information? What could they contribute working as partners with other organizations to developing oral histories through reminiscencing sessions, or to stimulate the idea that reading is something that can be done for its intrinsic pleasure rather than solely for the utilitarian purposes required in employment? Do they have a role to play in the so called ‘University of the Third Age’ in supporting continuing self-development?

##  ‘Smart librarians?’

|  |  |  |
| --- | --- | --- |
|  | ‘Smart’ ~~People~~ Librarians* Level of qualification
* Affinity to life-long learning
* Social and ethnic plurality
* Flexibility
* Creativity
* Cosmopolitanism/Open-mindedness
* Participation in public life
 |  |

Table 7. Characteristics of ‘smart librarians’

At this point, you might be beginning to ask ‘what is the point in what I’m saying?’ ‘What is the difference between the demands on libraries and librarians in ‘smart cities’ and anywhere else? Of course, there is none; libraries and librarians should not have to be in a city that aspires to be a ‘smart city’ to adopt these ideas. But – in my experience – few librarians approach their job in such a strategic way.

***Developing ‘smart librarians’***

The challenge then is to try to identify not only the role that libraries and information services can play in these new social experiments, but the skills that are needed to undertake those roles anywhere. Any ‘smart library’ requires ‘smart librarians.’

In a rapidly changing environment, library staff need to be not only competent to perform and manage current systems and services, but must also have the insight and commitment to continually focus on what information is needed in the city and to enhance their services by constructing new sources of information, and new techniques for disseminating the information effectively. How can librarians be equipped not just technologically but also philosophically for a role that is continually evolving without a commitment to strategic development by their employer and without being motivated by them?

How could a library attract staff of the necessary calibre through its own recruitment policies and employment practices? While employers and managers have a recognised responsibility to improve the overall work environment within their organization, how could libraries create an ‘employer brand’ aimed at projecting an image of the organisation as a compelling place to work? How could they themselves develop a ‘community of knowledge workers’ where, through regular exchanges of experience, a highly ‘networked’ team is created; the knowledge and skills of people reinforce each other; and a multiplier effect is generated?

***Planning for impact***

We must begin by acknowledging that library services are not generally found amongst development priorities, since they appear to offer little visible, immediate return on expenditure. Even when the economy is growing, libraries face competition for additional resources. When the economy is not growing, they have to fight for survival. In how many cases is a library regarded as a marginal activity, and the first to suffer budget reductions? Why does this happen?

The assumption, made by librarians, that information is a basic resource for development lacks any empirical underpinning. Significant amounts of money are invested each year by the public and private sectors in developing information sources and services. Yet, we have very little sense of the effect of that investment, and little evidence that we can put forward to support a claim for more money. Many libraries are consequently far from being considered as creators of new value; rather, they are seen as unnecessary expenditure.

All too often they have no strategic plan, or they have a plan that is more focused on developing the libraries’ building, equipment and collections, rather than a forward plan that is explicitly linked to the goals of the organisation that supports the library and that demonstrates how the library is assisting the organisation to achieve those goals. Developing such an explicit plan is not easy; it may even challenge the organisation that supports the library to clarify its own goals.

If there is a plan, how could any library demonstrate the realisation of its agreed mission without consistent, complete, comparable, and meaningful data? The library users’ evaluation of the quality and relevance of libraries’ resources and services, and meaningful measurements of information services’ impact on individual and national economic and social development have received insufficient attention. Put simply, there has been far too little impact assessment.

***Advocacy***

Librarians and information services may first have to increase the efficiency of existing services to release the resources required to introduce the new services needed in the ‘smart city’, but they will also have to increase their effectiveness. When no further efficiencies can be secured, librarians and information service managers will have to compete for additional resources, and that will require them not only to provide clear evidence of the impact of previous activities, but also to engage in advocacy and fund-raising.

It has been recognised for some years that, to achieve sustainability, it is preferable to tackle a development problem in all its dimensions. However, there has been little recognition of libraries’ potential role in multi-sectoral development programmes. The ‘Beyond Access’ campaign (http://www.beyondaccess.net/) in which IFLA is a leading participant is seeking to identify and promote innovative ways in which libraries contribute to addressing challenges in development, and to encourage policy makers to better utilize public libraries in their development policies. This is the latest extension of policy developments in IFLA that began with a conference on ‘Influencing the decision makers’, which I helped to organise in Ankara in the mid-1990s, and more recently was the theme of several IFLA Presidencies, most notably that of Claudia Lux, whose top priority was to have the concerns and needs of libraries put on the agenda of governments and local policy makers.

As a former Head of a School of Librarianship, and former Associate Dean of a Business School, I find it regrettable that most educators in the field of librarianship and information studies have made little effort to raise awareness of the need for strategic planning or advocacy. Many of their research activities seem obsessed with the novel applications of technology that continually appear, or have remained focused on improving the efficiency of libraries’ processes. Teaching has not focused sufficiently on inculcating the skills of policy formulation and strategic planning, or on making graduates aware of the need to raise awareness of libraries’ significance and equipping them to that effectively. Recently, it is true, academic research has begun again to examine the impact of information, but most of these efforts have focussed on improving professional practice, and too little attention has been devoted to promoting their implications of the results of that research for libraries’ role in local, national or international development. The work of social scientists in creating policy networks that involve politicians and other decision makers is a model that needs to be adapted to libraries’ needs.

The challenge in implementing the kind of changes that I have been describing represents a measure of the skills which must be deployed and the need for libraries to be able to employ managers with outstanding skills in integrating library services in multi-sectoral developments such as ‘smart cities.’ Does the emergence of ‘smart cities’ mean that we need special courses for ‘smart librarians’? Do the attributes that they need differ in any way from those expected of other librarians? Probably not, but real and lasting development can only be achieved by ‘smart librarians’ communicating an understanding of libraries’ role and impact in development to politicians and other decision makers. Nobody can develop a ‘smart library’ but its own ‘smart’ staff.

A version of this paper was presented at ‘*Smart City and Library Service’*, 6th Shanghai International Library Forum, Shanghai, China, 18-19 July 2012.

©The author 2012

## AUTHOR

Professor Ian Johnson held senior positions at the Robert Gordon University from 1989 to 2007, after previous posts in public libraries, with the British government’s Library Advisers, and in the College of Librarianship Wales. He has been Chairman of several British and international bodies concerned with education for Librarianship and Information Studies, and of the IFLA Professional Board. His interests focus on information literacy, continuing education, and electronic publishing, particularly in the context of librarianship in less developed countries. He has led or participated in numerous projects concerned with the development of libraries and Schools of Librarianship, funded by several international development agencies. He is currently Joint Editor of Libri: international journal of libraries and information services; a member of the editorial advisory boards of Education for InformationandInformation Development; and Chief Editor of a new series of books, Global Studies in Libraries and Information, to be published by De Gruyter for IFLA.