Database of Research Facilities in Maryland, USA: Implications for Economic Development in Japan's Kansai Region

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Abstract

There is no comprehensive listing of government, academic, and private research centers in Kansai that contains thorough information about the organizations and their activities in English. The same document in Japanese is also lacking. A similar database for the State of Maryland, USA has been valuable to the agencies involved in economic development. A similar compilation would be valuable to the Kansai economy, particularly if it published in English.

Keywords: Keywords: economic development; research and development; marketing; policy

I. Introduction

This study report is a brief qualitative analysis of the usefulness of a database of science and technology research centers in the State of Maryland, USA. This paper will attempt to show that there is practical value in an English language document providing an overview and comprehensive listing of science and technology research centers. The implications drawn are that Kansai would benefit materially from a similar compilation.

II. Background

In the years 2003-4, I compiled a detailed cross referenced database of science and technology research activities in the State of Maryland, USA where I worked for the State Department of Business and Economic Development (DBED). I undertook the development of the list in addition to my normal duties because there was a gap in information about this important aspect of the State's economy. Maryland's industry

is closely tied to the highest levels of basic and applied research in a variety of fields (electronics, space sciences, life sciences among others) because of the presence of U.S. federal government customers and research facilities. These research facilities are customers for and consumers of research services and top technologies. An abbreviated list of key facilities, National Aeronautics and Space Administration (NASA) Goddard, National Institute of Standards and Technology (NIST), National Institutes of Health (NIH), Army Research Laboratory (ARL), and John Hopkins Jet Propulsion Laboratory (JPL) for example, provides an idea of the vast scale of R&D activities in Maryland.

The resulting database was distributed electronically and published on the DBED website (www.choosemaryland.org) as *Academic, Federal, and Private Research Centers in Maryland*. The document has since been maintained, updated, and expanded. The database was originally created with three purposes in mind:

- Create a reference work for economic developers seeking to match the interests of businesses to the capacity and needs of research institutions around the state.
- Provide materials for the State's marketing program.
- Provide information for policy makers regarding state-level technology strategizing.

At least the first two of these goals have been met and, additionally, the document has had a national impact.

The document is currently located at http://www.choosemaryland.org/resources/pdffiles/publications/researchcenters2007.pdf

III. Findings: Three years on

Some three years after the initial creation of the list, a series of communications by email show how it is being used. The document has found use in:

- Attracting inward investment;
- Marketing and promotional material;
- Supporting small business locally;
- Supporting small business nationally;

- Building government to business relationships.

Investment attraction

Responding to the question of whether the document had been used directly with potential investing companies, the answer was generally yes. This was most clearly stated by informant D, head of development at University of Maryland, an institution with 30,000 students. He writes simply and emphatically, "Yes have used it..."

Marketing materials

In its most basic form, the list is a reference work and catalog of research resources. As such it is useful to a variety of business associations and organizations. Informant B, a DBED rank and file business attraction worker dealing with technology companies wrote the following:

> "The document has already been become a defacto [sic] "catalog" and is referenced by multiple public and private organizations."

In fact the list is currently available on the websites of:

- Federal Laboratory Consortium http://www.flcmidatlantic.org/pdf/links/researchcentersMD2004.pdf
- The Informatics Coalition www.informaticscoalition.com, and;
- Regional Manufacturing Institute of Maryland http://www.marylandmanufacturing.info/cms/rmiResearchCenter

Within DBED, the staff charged with handling technology business development, the Advanced Technology Team, has built information from the database into all its brochures, presentations, and other marketing literature.

Informant B further responded "yes" that the content of the database was going into the hands of businesses that were prospective investors from outside the state or national economy.

Supporting small business locally

Informant A, director of business research at DBED, suggests that the greatest value was in guiding small businesses to potential clients. He writes:

> " …my guess is that, so far it has proven to be most helpful to the entrepreneurial segment of the economy…"

The mechanism is simple: a start up technology business has very little time for marketing. They have products and services useful only to a special niche in the economy. Therefore the technology entrepreneur will use the list to identify with ease and clarity the best potential customers. The process works generally as follows. The entrepreneur:

a) develops a saleable technology or service;
b) refers to the list to identify which, if any, funded research centers have activities that might fit with the entrepreneur's service;
c) contacts and begins interaction with that research center.

In this archetypal process, the list becomes a business building tool for small technology companies. It is particularly useful for local companies, within or adjacent to the State of Maryland, because the focus is local.

An economic development officer, Informant G, indicates that the report has been of value in building business connections. He writes, "The report has been pretty useful in helping me find connections for some of the companies I have worked with…" In this respect, the list has been beneficial to small as well as large companies.

Supporting small business nationally

Despite the local focus, the document has a national impact as well. The national government through the U.S. Small Business Administration (www.sba.gov) contracted SAIC to write a white paper explaining to small businesses how to engage with federal agencies. SAIC included a copy of the Maryland research centers database when submitting the white paper to the client. This white paper is now a regular part of the information used by small businesses nationwide to find customers in the federal

government.

Government - Business relations

The database has also fostered relationships among government and business professionals. Informant G writes that the database has been quite good " …for finding experts to help me with due diligence on technologies." In this relationship, there is no monetary transaction, but rather an exchange of information on a goodwill basis. These relationships lend the government insight into the industry and help individuals in industry learn about programs and support in government.

IV. Implications

Kansai in general and Kyoto in particular are home to an array of research institutes, both government and academic, with some private R&D capacity as well. It is difficult, particularly for non-Japanese speakers, to make sense of this welter of organizations and their activities. Even in Japanese, there is a lack of easily accessible information that provides an overview and that is targeted at industry and policy makers. As a result, foreign businesses cannot make well-informed decisions about locating new operations in Kansai. Given the limited availability or outright lack of this information in Japanese, even Japanese businesses are likely to be poorly informed about R&D opportunities in Kansai and policy makers are left without a clear overview of the technology landscape.

The search for a list of research centers in Kansai unearthed three key items. The most complete list may be the interactive maps showing 60 centers on multiple web pages of the Kansai branch of Ministry of Economy, Trade and Industry (METI) Kansai. These web pages contain no academic research centers, therefore the list remains incomplete. As individual web pages, they are cumbersome to use.

Informant F, an employee at METI Kansai, noted that there were no complete lists available covering all science and technology, government as well as academic. Brochures at METI Kansai contain specialized information in a few areas such as life sciences.

METI Kansai's website turned up an aggregated total of research centers in Kansai, but with no supporting information at all.

Nationally, Japan Society for the Promotion of Science (JSPS) offers a list of national laboratories via their website at http://www.jsps.go.jp/english/e-fellow/list_host.html. Unfortunately, the usefulness of the list is crippled by lack of hyperlinks, locations, or other supporting information. Not even the kanji showing the correct Japanese language names of the institutions are included.

A directory, Kansai Kasseika Hakusyo, offers names, locations, and URLs or research institutes. Again this list is flawed because it contains no English language information and no information at all about the activities of the institutions.

Perhaps the best information source is through the web site of Japan Science and Technology Agency (JST) in the Directory Database of Research and Development Activities (ReaD) available at http://read.jst.go.jp. This information is in Japanese and English, includes contact information, and an outline of activities. Listing 70 some institutes, the only drawback to this list is lack of information on academic and private research centers.

V. Conclusion

A database of similar nature to *Academic, Federal, and Private Research Centers in Maryland* should be created for Kansai. The database would help Kansai to highlight its abilities and uniqueness in a world in which R&D capacity is becoming commoditized and globalized. In particular, the database would help Kyoto City and Prefecture to display their regional eminence in higher education because Kyoto is the focus of technology based R&D in the Kansai region.

A final version of the database would necessarily be in Japanese and English. The database, like its U.S. based predecessor, should be distributed widely to technology leaders and administrators in business, government, and academia via electronic media, particularly email and web publishing.

The database would have impact as:

- A marketing tool to attract R&D contracts from around Japan, the Pacific region,

North America, and Europe;

- A marketing tool to attract Foreign Direct Investment (FDI) from around Japan, the Pacific region, North America, and Europe;
- A policy guide to local Kansai governments and universities for development of research related business activity;
- A policy guide to Japan's national government for development of national science and technology strategies;

The final recommendation of this paper is the creation of a comprehensive English and Japanese language database of government, academic, and private research centers and their activities in Japan.

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