

The gains and losses of civic tech

Differences and conflicts between civic tech failures and public policy failures

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The use of civic tech in public administration to create new services and improve productivity cannot be achieved overnight. It also requires the accumulation of cooperation know-how among members through the accumulation of routine activities, as well as administrative practical skills, such as the formulation of specifications and their methods for procurement within the administration. In other words, not only a willingness on the part of the administration to work with citizens, but also the capacity for administrative reform, such as reform in procurement, is required.

In this presentation, a former Hiroshima Prefecture official and co-founder of Code for Japan, a general incorporated association promoting civic tech in Japan, will introduce the significance of civic tech from the perspective of administrative practice.

In civic tech, the value of innovation in public policy lies in the fact that failure does not end in failure. Civic Tech's greatest strength lies in the improvement process of designing administrative services from the user's point of view and the flow line. Put simply, the key to using civic tech is to prevent the creation of unnecessary software and systems that do not meet the needs of the population and are not user-friendly. Usability can be improved by prototyping in the upstream process with the participation of citizens, followed by modifications through events such as idea-sons and hackathons (where engineers, creators and others gather to jointly develop software within a certain period of time).

Local administrations should use civic tech for co-creation in the upstream process up to specification formulation and for citizen participation in information input (crowdsourcing) in service execution. This is easy to understand when compared with the architecture of public administration. The situation is that the municipal system is tantamount to suddenly designing and executing the implementation based on the contractor's quotation without the basic design part of the experts and users. Furthermore, as a result of the 'malicious reform' of the information system, in which the system is renovated and rebuilt according to the supplier's estimate whenever there is a revision of the legal system, the user-friendliness of the system remains a secondary concern in Japan. This is where the demands and reactions of citizens should be incorporated.

The government, when it does not have the technical capacity to formulate specifications, is a dangerous customer for vendors developing information systems, as the ordering of use is vague and does not look at safety and affordability, and current government contract regulations result in large losses for the vendor. Furthermore, the costs of quotations and specification are actually taken out of the upstream design of the development process. It is not surprising that maintenance contracts and other contracts have to be set at a higher level.

Through civic tech activities, it is possible to set up a legitimate process and a forum for discussion on an equal footing (an opportunity for stakeholders to cooperate in the pre-competitive area) regarding the costs of the upstream process.

Furthermore, by reimbursing opportunity costs and scrutinising specifications, both parties can avoid vendor lock-in, a problem in information systems procurement that results in high quoted costs. For this reason, there are incentives for major vendors and others to participate. Furthermore, citizen participation from the upstream process is, in private sector management terms, marketing from the customer perspective. By narrowing down the requests for this and that, further cost savings are expected.

The benefits of citizen participation in the upstream process of information system design are not limited to the procurement efficiency gains that come from getting good ideas for co-creation in the pre-market competition area. Since the process also includes consensus building, it also has the function of preventing social controversy in advance, such as with genetically modified food, once the science and technology has already been put to practical use and has entered the provision stage. This is a concept called 'upstream involvement' in the social theory of science and technology.

However, civic tech is not good at stable operation and maintenance of systems. The cause lies in the spirit of the open source community that supports civic tech and the problems related to the data structure on the administrative side.

In the former, engineers and designers are very enthusiastic about the creative act of development as volunteers (pro bono using their expertise) due to their responsibility as professionals, whereas they are not good at dealing with administrative practices such as bureaucratic and organisational coordination and operation.

Furthermore, the time of activity is inevitably uneven depending on the individual's life stage. This is a challenge common to non-profit organisations and volunteering in general.

The latter problem is related to the data structure, which is the response to changes in the data structure due to institutional changes, etc. In particular, the issue of data structure is one of the most difficult challenges when it comes to the commonisation of

information systems for local administration throughout the country.

Compared with commercial services and public budgetary measures, software development is inferior in terms of responding to changes in the legal system. This is a common problem pointed out by civic techs around the world. Therefore, procurement and execution under the conventional administrative enforcement system (vertically-integrated operations) is suitable with regard to operation and maintenance management.

In fact, in one city, a civic tech organisation created an application to publish information on school lunch menus including allergen information related to nutrition education, which was announced at a press conference as the city's official application, but the system stopped due to data updates and deficiencies.

On the other hand, if it is not a large-scale core system, there is a large scope for local or locally attracted small and medium-sized venture companies to participate in its operation. The benefits in terms of industrial development, with a budget that is orders of magnitude smaller than that for manufacturing support and industrial location, cannot be overlooked. In fact, as far as the author is aware, there have been many cases in Okinawa Prefecture and Kobe City where commercial enterprises in the raw materials and consumer goods industry have been invited as experts by the organisers of civic tech organisations, leading to the establishment of branch offices and other facilities in the invited countries.

Curriculum vitae

Prof/Dr. Nobuyuki Shirakawa researches into innovation management and data driven science. His research interests include foresight and technology planning, research evaluation, public sector's innovation, social entrepreneurship and its ecosystem.

Currently Associate Professor (tenured), Engineering Management Programme, Faculty of Engineering, Niigata University, responsible for co-op education with local companies within an industrial cluster. Also cofounder and fellow of the Code for Japan.

Prior to his current position, as a Senior Research Fellow at the National Institute of Science and Technology Policy, he promoted international research cooperation in technology foresight across all scientific disciplines and geographic regions. His work has established and expanded international relationships for the Science and Technology Foresight Center. He also engaged in empirical analysis and research on science, technology, and innovation policy for the Research Unit for Science and Technology Analysis and Indicators. Dr. Shirakawa also served at the New Energy and Technology Development Organization (NEDO), and Hiroshima Prefectural Government. At NEDO, drawing from his experience, he established a new institute at NEDO to develop research capabilities in technology foresight and its evaluation. At Hiroshima Prefectural Government, he engaged in science and technology promotion across all scientific disciplines from agricultural extension to high-tech industries.

Dr. Shirakawa earned his Bachelor in Management Science from the Tokyo University of Science, a Master in Business Management from Hiroshima University, and a Doctorate in Media & Governance (Public Policy and Informatics) from Keio University.