

Challenge!! Open Governance 2016 Application Form for Citizens/Students

Title of the Agenda (Note)	No. 56	Title Considering measures to increase the recognition level of the city and increase the number of visitors	Name of Municipality Ikoma City, Nara Prefecture
Title of the Idea (disclosed)	ParmoSense: Platform for sharing the “fun” of tourists		

(Note) For the Title of the Agenda, please fill in the title of the agenda of the municipality that is applying for COG listed in the COG2016 website.

1. Applicant Information

Name of Team (disclosed)	NAIST-UBI ParmoSense Developers	
Team Style (disclosed)	<input type="radio"/> 1. Team of citizens <input checked="" type="radio"/> 2. Team of students <input type="radio"/> 3. Team of both citizens and students	
Information of the representative (only the name will be disclosed)	Name (disclosed)	Yuki Matsuda
	e-mail (closed)	
	Tel#(closed)	✓
	Relationship in between the rep. and the municipality(closed)	

* About the conditions for the disclosure of information

What you are going to fill in in “2. Description of the idea” in the following pages will be reviewed and disclosed under the Creative Commons Attribution 4.0 International License (CC BY). However, if the applicant requests, it will be disclosed under the Creative Commons Attribution 4.0 International License (CC BY-NC). Please notify us when you apply if you prefer this. In either case, the credit will be given to the name of the team that applied.

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(Notes)

<Name of the file used for the application and where to send them>

1. Upon application, please name the file as COG2016_応募用紙_specific team name_relevant municipality name and send it to the following email address. The email address can be accessed from the “Application

Acceptance Section” of the COG2016 website of the University of Tokyo, Graduate School of Public Policy.
admin_padit_cog2016@pp.u-tokyo.ac.jp

<About Disclosure and non-disclosure>

2. The name of the idea, the name of the team, the team style, the name of the representative, and the “description of the idea” will be disclosed.
3. The above information will be disclosed after review. (For example, anything that is offensive to public order and morals or plagiarism will not be disclosed.)
4. “Self-evaluation of the screening items” will not be disclosed through the information provided in this application form. What has been determined to be excellent in content and can possibly be used for future reference may be disclosed after consulting with the applicant during the advice phase after the public screening.
5. Any parts of the sentences, photos, figures, and graphics used in the “Description of the idea” section whose intellectual property belongs to anyone other than the team should be noted in quotes in accordance with law or with an explanation that permission has been obtained from those who own the intellectual property rights. The same applies to the “Self-evaluation of the screening items” section.

<List of team members>

6. Please provide the list of the team members in a separate excel file and submit it with the application form. (The information of the members other than the name of the team representative, as described in 2. will not be disclosed by the office of COG. Please see the attached document for details.)

2. Description of the idea (disclosed)

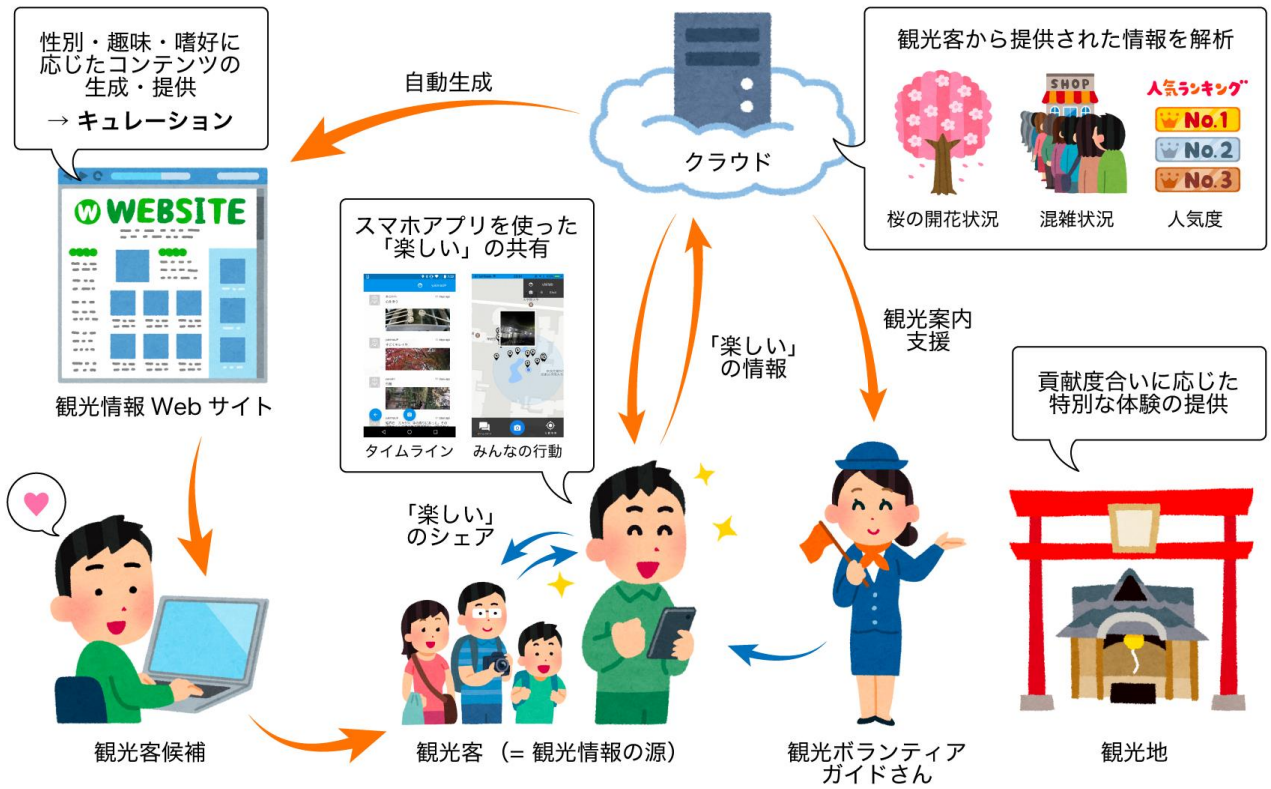
Please tell us the story of the idea (public service) that will help concretize the agenda and solve related problems using data and information materials.

(1) Content of the idea (disclosed)

For the idea, it is recommended to think of who does what, where, when, and how, construct the content with each of these elements, and organize the story. Please provide the content within the following section. (You may use figures and tables as needed.)

Ikoma City, Nara Prefecture has various historical landmarks and facilities suited for sightseeing and a system of volunteers to introduce them has been established, although there are no large-scale sightseeing facilities. However, the city has not been able to establish an ecosystem for promoting these assets to tourists effectively, resulting in a decrease in the number of tourists; as a result it has fallen into a so-called vicious circle.

Here, we propose a **circular ecosystem of sightseeing information** using “ParmoSense,” which our lab has been developing. Figure 1 shows the diagram of the concept for the public service proposed. To realize the ecosystem, we must forget about the general concept of tourists as **“those receiving tourism information”** and redefine them as **“those generating and distributing sightseeing information.”**



性別・趣味・嗜好に応じたコンテンツの生成・提供 → キュレーション	Generation and provision of contents according to gender, hobbies, and preference → curation
観光情報 Web サイト	Sightseeing information website
観光客候補	Potential tourists
自動生成	Auto generation
スマホアプリを使った「楽しい」の共有	Sharing "fun" using a smartphone app
タイムライン みんなの行動	Timeline Everyone's activity
「楽しい」のシェア	Sharing "fun"
観光客 (= 観光情報の源)	Tourists (source of sightseeing information)
クラウド 観光客から提供された情報を解析	Cloud Analyzing the information provided by tourists
桜の開花状況 混雑状況 人気度	Bloom status of cherry blossoms Congestion status Degree of popularity
「楽しい」の情報	Information for "fun"
観光案内支援	Tourist supports
観光ボランティアガイドさん	Sightseeing volunteer guide
貢献度合いに応じた特別な体験の提供	Providing special experiences according to the

	degree of contribution
観光地	Sightseeing spots

Figure 1. Circular ecosystem of sightseeing information using ParmoSense

“ParmoSense” is a system by which tourists can share the “fun” they felt during sightseeing in real-time through photos and words. This shared information (= seeds of sightseeing information) will be analyzed and compiled into various elements of sightseeing information (e.g., bloom status of cherry blossoms, autumnal leaf coloration, congestion status, popularity of sightseeing spots, etc.) to generate sightseeing information. By integrating this information, it will be possible to automatically generate and update data by sightseeing volunteer guides for tourist support and for the sightseeing information website.

In this circular ecosystem, tourists assume the role of generating and updating sightseeing information without realizing it, which contributes to **lowering the cost for organizing sightseeing information**. It will also be possible to provide contents according to the profile of the tourists, such as preference or gender, as information accumulates.

(2) Basis of the idea (disclosed)

Please explain the basis of the idea (why this idea), including numerical data that supports the idea (what can be shown by numerical values, such as past results, statistics, or questionnaires) and evidence (information materials, plans, or existing measures, etc.) (hereinafter collectively referred to as “data materials”). Please indicate the sources of the numerical data or evidences. Make sure you completely explain the basis within the following two-page section.

■ The budget plan of the city: The significance of this idea from the perspective of the municipal administration

According to the 2016 budget of Ikoma City, 25.27 million yen, which accounts for 0.065% of the total budget [1], is allocated to the tourism reconstruction project from the total budget of 38.566 billion yen. Because 0.25% of the total budget is allocated to the city’s tourism strategy in the neighboring city of Nara [2], the difference between the two cities is blatantly obvious. The manifesto of the mayor of Ikoma City consists of 7290 characters, but only 49 of them are used to refer to tourism, suggesting that the municipal government itself has a low level of interest in tourism [3]. The following six issues are the main items that are included in the budget of the tourism reconstruction project.

- Management of sightseeing facilities
- Tourism promotion, such as the creation of tourism posters
- Aid to the tourism association
- Projects for vitalizing commerce-tourism interaction

- Implementation of events with Icomania 100 like the projects “100-yen shopping street,” “Machinaka bars,” and “Machizemi”
- Establishing a commerce-tourism vision
 - Creating local products with stories in collaboration with sweets shops in Ikoma or souvenir projects
 - Establishing tourism model areas in Ikoma City and supporting events in those areas
- Bicycle usage network project

Some of these items focus on creating new local products and implementing more events, but no policies have been established regarding new promotional methods to distribute information to people so that more people would know about new local products and events.

Bearing in mind the current situations surrounding tourism mentioned above in Ikoma City, a system for distributing the information inexpensively on a continual basis is necessary to reconstruct and expand tourism.

Based on the above, a circular ecosystem of sightseeing information is necessary in which tourist support by tourism volunteer guides and tourists themselves become the resources and are utilized to the fullest to continuously distribute information.

[1] Overview of the 2016 budget proposal of Ikoma City:

<http://www.city.ikoma.lg.jp/cmsfiles/contents/0000003/3452/yosan28-5.pdf>

[2] Disclosed status of the 2016 initial budget proposal of Nara City:

<http://www.city.nara.lg.jp/www/contents/1455514696307/index.html>

[3] Manifesto of Masashi Komurasaki, mayor of Ikoma City:

<http://www.city.ikoma.lg.jp/cmsfiles/contents/0000002/2848/manifest.pdf>

■ The significance of this idea viewed from the perspective of demographics and the culture of the city

The population in Japan is gradually decreasing, but **Sabae City, Fukui Prefecture** has succeeded in ensuring the social increase of population, rather than the natural increase. The overall population in Fukui Prefecture has been on a declining trend, but Sabae City is one of the few cities in Fukui Prefecture where the population has increased (Figure 2) [4].

Sabae City is among the first to



社会増加率(%)		転入率(%)		転出率(%)	
順位	市町名	順位	市町名	順位	市町名
1	高浜町(0.15)	1	高浜町(3.36)	1	美浜町(3.54)
2	鯖江市(0.12)	2	おおい町(2.88)	2	小浜市(3.28)
3	福井市(△0.05)	3	福井市(2.81)	3	敦賀市(3.27)
4	坂井市(△0.22)	4	美浜町(2.79)	4	あわら市(3.24)
5	おおい町(△0.25)	5	鯖江市(2.77)	5	高浜町(3.21)
6	若狭町(△0.37)	6	小浜市(2.67)	6	越前市(3.15)
7	永平寺町(△0.42)	7	越前市(2.66)	7	おおい町(3.13)
8	大野市(△0.49)	8	敦賀市(2.64)	8	池田町(3.00)
8	越前市(△0.49)	9	坂井市(2.61)	9	南越前町(2.88)
10	勝山市(△0.58)	10	あわら市(2.59)	10	福井市(2.86)
11	小浜市(△0.61)	11	永平寺町(2.43)	11	永平寺町(2.85)
12	敦賀市(△0.63)	12	若狭町(2.39)	12	坂井市(2.83)
13	あわら市(△0.65)	13	大野市(2.16)	13	若狭町(2.77)
14	越前町(△0.66)	14	南越前町(1.99)	14	鯖江市(2.65)
15	美浜町(△0.74)	15	越前町(1.94)	15	大野市(2.64)
16	南越前町(△0.89)	16	勝山市(1.76)	16	越前町(2.60)
17	池田町(△1.52)	17	池田町(1.48)	17	勝山市(2.33)

Figure 2. Estimated population of Fukui Prefecture [4]

Figure 3. Applications created by residents/private sector [5]

launch open data, which means disclosing administrative data, under the slogan “Data City Sabae.” In addition, the city has carried out a number of events involving students and residents of other cities and established a culture where “**residents and visitors create the community together.**” The data collected by the municipal government and the residents have been assembled as open data and many applications have been developed for tourism and for residents (Figure 3). Hackathon and ideathon events for creating these apps have also attracted many people other than tourists. To promote the use of these applications, the city has actively promoted citizen participation by holding lectures for the citizens [5]. These efforts have been propagated through the media to convey the appeal of the area. This type of culture where residents not only play the main role but also benefit greatly may have led to the immigration of the population.

社会増加率 (%)	Percentage of social increase (%)
転入率 (%)	Percentage of immigration (%)
転出率 (%)	Percentage of emigration (%)
順位	Rank
市町名	Name of municipality
Takahama-cho	Sabae City
Fukui City	Sakai City
Ohi-cho	Wakasa-cho
Eiheiji-cho	Ohno City
Echizen City	Katsuyama City
Obama City	Tsuruga City
Awara City	Echizen-cho
Mihama-cho	Minami-echizen-cho
Ikeda-cho	
Takahama-cho	Ohi-cho
Fukui City	Mihama-cho
Sabae City	Obama City
Echizen City	Tsuruga City
Sakai City	Awara City
Eiheiji-cho	Wakasa-cho
Ohno City	Minami-echozen-cho
Echizen-cho	Katsuyama City
Ikeda-cho	
Mihama-cho	Obama City
Tsuruga City	Awara City
Takahama-cho	Echizen City
Ohi-cho	Ikeda-cho

Minami-echizen-cho	Fukui City
Eiheiji-cho	Sakai City
Wakasa-cho	Sabae City
Ohno City	Echizen-cho
Katsuyama City	

市内の公衆トイレマップ	Map of public restrooms in the city
コミュニティバスの現在地が分かる「つつじバスモニター」	“Tsutsuji bus monitor” that tells us the location of the community bus

In contrast, the culture of open data or data collection and usage has not spread to the residents of Ikoma City. There are many residents and students who can present information in a way that is visible to tourists and residents in Ikoma City, such as the Code for IKOMA and the students of Nara Institute of Science and Technology. Therefore, if we can gather the data necessary for creating apps, we can promote the development of applications, which may lead to the development of a resident-participation culture.

If we can involve **tourists** in a natural way to be part of the process of creating data, including tourism information, we believe that we can not only promote the sightseeing spots of the city but also **attract attention to various activities and the culture of the city**. We believe that the idea we are proposing here will contribute to realizing this concept and that it can be utilized as a tool to connect tourists and residents (sightseeing volunteer guides) and attract tourists' interest.

[4] 2013 estimated population of Fukui Prefecture (Table 19, indexes by municipality)

Summary: <http://www3.city.sabae.fukui.jp/jiman/jinkou/jinkou.html>

Original data:

http://www.pref.fukui.lg.jp/doc/toukei-jouhou/zinnkou/jinkou25_d/fil/19.xls

[5] “There is no challenge without risk” The town with the population of 70,000 becomes an “advanced area in open data” Efforts by Sabae City, Fukui Prefecture – IT Media News:

<http://www.itmedia.co.jp/news/articles/1406/25/news051.html> (2014)

(3) The flow of activities leading up to the realization of the idea (disclosed)

Please explain briefly the general flow of activities leading up to the realization of the idea, including the body in charge of the realization of the idea, specific processes, milestones, etc. within the following section. (You may use figures and tables as needed).

As of today, a system that allows tourists to distribute and share information, including photos

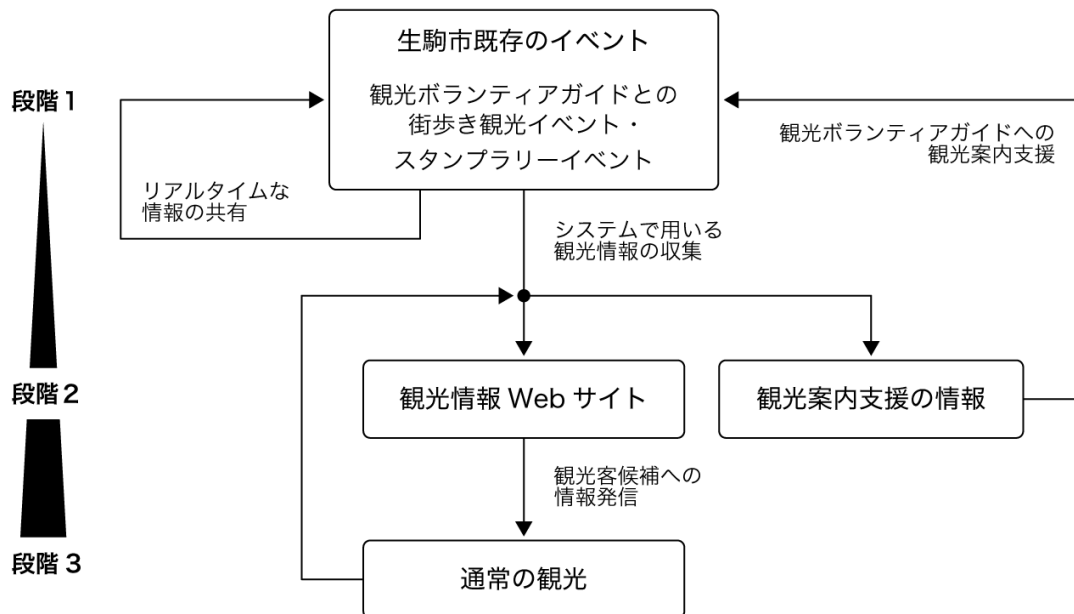
and words, has already been implemented. However, the main player necessary to realize this service is tourists, and therefore it is necessary to build a platform that would urge tourists to provide sightseeing information. To realize this platform, it is necessary to implement the following mechanisms:

- ✓ A self-building and self-updating system for the sightseeing information website based on the data obtained by analyzing shared information;
 - This serves as a window for securing potential tourists and actually bringing them to Ikoma.
- ✓ An information generation system for tourist support of sightseeing volunteer guides;
 - This generates candidates for efficient sightseeing routes that have great scenery and tourism spots.

There is a general concern that data collection is difficult during the initial stage in these types of systems (because data collection is labor-intensive), but our system **can be used in this initial stage** as well.

Figure 4 shows the flow necessary to realize this system and provide services on a continual basis. The details are as follows.

1. Because there are no data at an early stage, "ParmoSense" will be introduced to the city-strolling event or stamp rallies already carried out in Ikoma City. Here, only the real-time information-sharing function among tourists will be activated to collect data.
2. Once a certain amount of data have been obtained, we move on to the stage where an information generation system will be activated for use on the sightseeing information website or for tourist support.
3. We update the sightseeing information website and tourist support based on sightseeing information that has accumulated through the events regularly implemented by the city and through regular sightseeing, and make the system suited to the profile (gender or preference) of the tourists.



段階 1	Phase 1
段階 2	Phase 2
段階 3	Phase 3
生駒市既存のイベント 観光ボランティアガイドとの街歩き観光イベント・スタンプラリーイベント	Existing events of Ikoma City City-strolling event with sightseeing volunteer guides and stamp rallies
リアルタイムな情報の共有	Sharing real-time information
システムで用いる観光情報の収集	Collecting sightseeing information to be used in the system
観光ボランティアガイドへの観光案内支援	Tourist support for sightseeing volunteer guides
観光情報 Web サイト	Sightseeing information website
観光案内支援の情報	Information for tourist support
観光客候補への情報発信	Distributing information to potential tourists
通常の観光	Regular sightseeing

Figure 4. Flow to realize the system and provide services on a continual basis

(4) Others (disclosed)

Briefly explain the selling points of the idea, restrictions upon realization of the idea if any, near-term solutions, and potential for the future (for example, “if the limitation of XX can be eliminated in the future, we can also do YY”) within the following section.

The great advantage of “ParmoSense” is that everything from information collection during the initial stage to the provision of sightseeing information **can be managed consistently** on the

same system. In terms of Phase 1 mentioned above (data collection during the initial stage), **we are currently verifying ParmoSense's effectiveness** and ParmoSense has been introduced in the following events hosted by a school, a municipality, and a local organization.

- ✓ Nara Institute of Science and Technology, open campus, stamp rally
<https://ubi-s13.naist.jp/ubistpage/ubiblog/archives/2022>
- ✓ Cycle rally of Ayase City, Kanagawa Prefecture
Byutto Ayase: <http://tabihatsu.jp/chikatabi/program/92750.html>
- ✓ City-strolling event of Ikoma City, Nara Prefecture
Civic Tech Party vol.4 : <https://ikoma-civic.tech/event04/>

It is essential to collaborate with the events hosted by the municipal government to realize this system. The system has been introduced in the city-strolling event of Ikoma City, but it needs to be introduced in a wide variety of events to cover the entire area of Ikoma City and collect comprehensive information. Because methods to share the “fun” among the event participants vary by event, the sharing methods need to be implemented according to the type of events and they need to be actually introduced in the events.

We also need to give regular tourists who are not event participants incentives to use the system, i.e., to distribute information. In terms of this restriction, we are hoping to break through it by cooperating with sightseeing spots and facilities and **providing special experiences according to the degree of contribution** (right side of Figure 1). Such special experiences include providing the right to see the places that are not usually open to the public or giving discounts on entrance fees to the facilities. In terms of the former, JAL offers a similar service, providing users the right to see inside the factories using miles (https://www.jal.co.jp/jmb/kengaku_coupon/). We are planning to strengthen tourists' motivation in an inexpensive way by enhancing their level of satisfaction.