



TIP Working Party CO-CREATION PROJECT

Case study from Japan



AIteC - AI Technology Consortium

Disclaimer

This study is released under the responsibility of the authors of the document. It does not represent the official views of the OECD or of the governments of its member countries. The Organisation cannot be held responsible for possible violations of copyright resulting from any written material in this case study.

Please cite as:

Kawano, H. (2020), "Case study from Japan on AITeC – AI Technology Consortium. Contribution to the OECD TIP Co-creation project". Accessible online [as of 9/12/2020]: <https://stip.oecd.org/stip/knowledge-transfer/case-studies>

Executive summary

The AI Technology Consortium (AITeC) was established in 1 May, 2015 and will be completed at the end of March 2023, for a total budget of 24,000,000JPY/year in 2019. The thematic focus in AITeC is co-creation's contributions to digital innovation and AI technology and effects of data sharing. AITeC aims to achieve the vision by providing a platform to develop co-creation continuously among stakeholders across disciplines. This consortium generates value co-creatively by utilizing big data and AI technology with accumulating various experience for achieving success. By making predictions with AI technology, uncertainties in society can be reduced and benefits can be improved. The increase in data can improve the predictive performance of AI systems. Real-world big data will increase, as more people use the service with AI technology. The objective of AITeC is to promote Proof of Concept (POC) approach to create value co-creatively. Several POCs are demonstrated, e.g., Probabilistic modeling technology, AI Vending Machines, Demonstration of AI Digital Signage, User analysis and support in the area of region, sightseeing and healthcare.

National Institute of Advanced Industrial Science and Technology (AIST) has been initiated this consortium. At the end of March 2020, 211 partners were involved from private companies, universities, research sector, NPOs, autonomous bodies and so on. The importance of motivation of partners in AITeC is seeking other partners to collaborate for POC, sharing skills, knowledge and experience for creating value. The official meeting is held annually and the working group meetings are held more frequently. The conference, workshops and seminars are also organized.

All members in the consortium share their data with each other but AITeC itself does not register any new IPs. The results of projects are accessible to all AITeC members. The Steering committee evaluates projects based on four criteria; as feasibility, profitability, user perspective, and contribution to society by annually. The award program is provided and the prize winners are chosen by the steering committee. The results of the award will be made public.

The key success factors in this consortium are implementing POC cycle in a short span of time, i.e. seeking potential collaboration among the members, formulating action plan, launching demonstration projects, establishing a research system, conducting POC and its feedback. The key to success, it is important to accept co-creation members' independence, distinctive approach and intrinsic motivation.

1. GENERAL CHARACTERISTICS OF THE CO-CREATION INITIATIVE

Name of the initiative*:

AI Technology Consortium (AITeC)

Start date*:

1 May, 2015

Expected end date*:

The AITeC was scheduled to end at the end of March 2020.

End of the initiative date has been extended to end of March 2023.

Country/ies where partners are based*:

Japan

Project budget *:

Total: JPY 24,000,000 (FY2019) (approx. EUR 200,000), average budget for each project is JPY 1,000,000 (approx. EUR 8,400)

Share of budget co-funded by partners:

Budget is equally funded by all members.

All members pay the same amount for AITeC activities.

Free participation only for authorized special members which are nonprofit organizations such as public authorities.

Share of public funding (please provide details of the public authorities providing support):

N/A

Share of budget co-funded by VC or other sources (please specify):

N/A

Main focus (please select)*: Research / Economic / Social

Each working group focuses on his own.

The AITeC has 16 working groups. All member of the working group are also the AITeC member.

Goal and objective of the co-creation initiative

1*. What is the vision of the co-creation initiative?

(e.g., stimulating research and discourse about a new model of global governance; platform for

outcomes-based innovation to save and improve lives in low-income countries)

Generating value co-creatively by utilizing big data and AI technology with accumulating various experience for achieving success.

By making predictions with AI technology, uncertainties in society can be reduced and benefits can be improved. That means value can be generated. The increase in data can improve the predictive performance of AI systems. Real-world big data will increase, as more people use the service with AI technology. To this end, the following points are important;

(1) start concrete social experiments or demonstration projects promptly and maintain continuous improvement cycle;

(2) reflect the evaluations of users and related stakeholders in computational models and systems to dramatically increase value.

AITeC aims to achieve the vision by providing a platform to develop co-creation continuously among stakeholders across disciplines.

Value: includes not only business and society but also technology, knowledge and knowhow and data itself.

1A. What is the rationale behind the vision of the co-creation initiative?

The real world is rapidly being digitalized by using big data from IoT devices and simultaneously disseminating AI technologies in data processing. That leads to cyber-physicalization.

In particular, big data and learning AI technologies are developed together with service or application providing value to users, so it is critical to add more value. To that end, it is important to conduct social experiments and demonstration project promptly for knowing how to add more value and maintain continuous improvement cycle.

1B. Was it someone's initiative or was it jointly set by all partners?

Please provide details on the mechanisms implemented to co-develop the vision.

It was jointly set by all members when the AITeC Consortium was established.

1C. Has the vision of the initiative ever been revised? Why?

No. There is no need to revise.

2*. What are the main objectives of the initiative?

AI Technology Consortium promotes Proof of Concept (POC) approach to create value co-creatively. The PoC is owned by consortium and shared with member.

By organizing working group, AITeC provides a platform where AITeC member can share their challenges and strengths and deepen mutual understanding, which results in best matching between needs, use cases or data and technology. At the working group, they seek for the

possibility of collaboration among the members, formulate action plan, launch demonstration projects with budget and establish a research system.

To deploy AI technology or utilize big data, working group launches projects and conduct demonstration experiments, including field selection. Verifying both successful cases and failed cases, knowledge and know-how are shared among member.

Seminars, co-creative workshops, contests for new business ideas and exhibition and events related to AI technology (AI tools, AI living labs, big data utilization, etc.) to AITeC partners are provided.

The demonstration examples, which Cyber-Physical system constructed by using Bayesian network and the information provided to the user by using AI technology, are introduced as below.

e.g., Probabilistic modeling technology, AI Vending Machines, Demonstration of AI Digital Signage, User analysis and support in the area of region, sightseeing and healthcare etc.

2A. Are there plans to commercialise the co-created products and/or services? Please explain.

No. The projects in the AITeC aim to implement the POC only. Further development of any co-created products/services are not included in the AITeC. The results are only shared among the consortium members.

3. What are the main motivations of the different partners to collaborate in this initiative

(e.g., need for finance, competences and skills, network & connections of partners, risk sharing)?

Seeking partners to collaborate for POC, sharing skills, knowledge and experience for creating value.

The projects are collaborative with the partners who have an identical purpose so that they collaborate with each other even if they are competitors. The non-disclosure agreement (NDA) will be signed up as necessary.

Functional roles of co-creation partners

4*. Please fill in the table below with the following information:

4A*. Specify all partners involved in the co-creation process

(specifying the number of partners per type)

4B*. Choose the co-creation process project initiator(s)

4C*. Specify where partners are located

4D*. Specify what are the main activities and responsibilities of partners

	A.	B.	C. Location			D. Main activities						
	Partners for co-creation	Project initiator(s)	Local/regional	National	International	Priorities setting	Research	Designing products	Experimentation and development	Commercialization / Support (marketing, consultancy, etc.)	Product launch	Financial engagement (share of funding, %)
Firms: 178												
Service	114	12	46	41	27	15	0	0	77	0	0	59
Manufacturing	64	0	8	7	49	0	0	0	53	0	0	34
Research organizations: 13												
PRIs	2	1	1	1	0	1	0	0	1	0	0	0
Universities	11	0	11	0	0	0	0	0	6	0	0	2
Civil society: 13												
NGOs	12	2	8	4	0	2	0	0	8	0	0	5
Personal engagement	1	0	1	0	0	0	0	0	1	0	0	0
Government: 7												
Public authorities	4	0	4	0	0	0	0	0	1	0	0	0
Gov. agencies	3	0	0	2	1	0	0	0	2	0	0	0
Transnational org.	0	0	0	0	0	0	0	0	0	0	0	0

The additional information about the role of public sector, there are categorized into two types as follows.

(1) Public sector to consortium

- a) Implement investigation and hearing to any relevant companies on a matching basis when the public sector brings their study to the consortium.
- b) Provide information such as public subscriptions and implemented projects, which the public sector wants to announce to the member companies through the consortium.
- c) Seek for the member companies that can work together for the implemented projects on which the public sector cannot implement by alone.

(2) Consortium to public sector

- a) Create timely opportunities to share consortium activities, such as projects and concept making, with the public sector.
- b) The consortium examines the feasibility of the match between private companies and public authorities for the projects, such as the regional projects or the projects with high public interest, which are difficult to implement by private companies.
- c) Promote the collaborative activities by establishing collaboration system as the public sector hub for those activities in which private companies compete against each other.

5*. Were there any conditions to participate the co-creation initiative?

(e.g. amount of funding provided, data sharing conditions, type of expertise, etc.)

N/A

Q5A. If there were any criteria for selecting partners, please, name them

N/A

For each co-creation partner, please, provide the following information:

6*. Name of organization and its scope of activities (local/regional/national/international) and website (if available)

Please refer to the Table 1.

7*. Please explain the rationale of involving this partner in the co-creation project

All of them actively seek out the opportunities for collaboration to conduct the POC and support the co-creation project. In addition, all projects have partners.

8*. Please explain the role and main responsibilities of this partner in the co-creation project

Please refer to the Table 1.

9*. What is the financial engagement of this partner in the co-creation initiative (i.e. what is the share of funding they provide overall and for each of the activities of the co-creation project)?

Equally funded by all members.

All members pay the same amount for AITeC activities.

2. MANAGEMENT STRATEGY

10*. Who is responsible for co-creation process management?

Chair of the AITeC.

Q10A*. Was a steering group or advisory committee set up?

If so, please provide details on its role and frequency of interactions.

The steering committee consists of the chair, vice chair(s) and other steering committee members. Advisory members are appointed by the chair and they can provide advice to the Consortium or WGs.

11*. What is the frequency of interaction between co-creation partners? (please select) If necessary /Once every few months/ Several times a month / Regularly

If necessary.

Q11A*. Please describe the nature and frequency of interaction between all couples of partners
No details are available.

12*. What are the main means of communication among co-creation partners? (Please choose all appropriate answers)

- a) Official meetings at the end of the reporting period (quarterly, yearly)
- b) Sharing of newsletters, documents, reports, publications
- c) Digital tools (e.g., email communication, conference calls, internet platforms)
- d) Conferences, workshops, etc. engaging external stakeholders
- e) Personal meetings
- f) Other (please specify)

a) Official meetings are held annually at the end of the reporting period. Meetings among the chair, vice chair(s), other steering committee members and WG leaders are held monthly.

Working group meetings are held more frequently and frequency varies per working group.

- b) Sharing of newsletters, documents, reports in the cloud, publications
- c) Digital tools (e.g., email communication, virtual meeting platform)
- d) Conferences, workshops, seminars (internally/occasionally engaging external stakeholders)
- e) Personal meetings

13. Is there an partnership agreement for the co-creation initiative? Yes / No (go on to question 13C)

Yes.

13A. Is the agreement formalised? Yes / No

Yes

13B. Please specify the type of the agreement:

- a) Legal agreement
- b) Memorandum of understanding
- c) Other (please specify):
- c) Other: Rules of Consortium

13C. Are legal issues related to the ownership of jointly developed IPRs settled in a partnership agreement?

No.

13D. In case there is no agreement, please explain how partners' activities are coordinated. If necessary, non-disclosure agreement (NDA) can be signed by relevant members.

14A*. Who is the owner of data from the co-creation initiative?

Data is shared among members, except if NDAs exist, as mentioned above
If a member who provides information wishes to keep non-disclosure and/or to restrict the scope of the disclosure of the information, the member may enter into the NDA with other member(s) in the working group or the project. The content of the contract is discussed and agreed between those parties.

.

14B*. Who is the owner of IP from the co-creation initiative?

We don't register any new IPs for the projects under the activities.

15*. How is the process of accessing research results (for partners) organized?

Results are shared at the debrief meeting. The documents are stored in the cloud and all members have access to them.

16*. How do you set the balance between data sharing and IP protection?

All members in the consortium share their data with each other. We don't register any new IPs for the projects but the ownership rights of existing IPs are retained.

17. Is public access to either co-creation results or products granted?

No. Only AI Technology Consortium members can access them.

18*. What types of intellectual property (IP) protection mechanisms are used (e.g., patents,

trademarks, industry design, utility model, complexity)?

No types of IP protection mechanisms are used since we don't register any new IPs for the projects under the activities.

18A*. What types of IP are more important for your co-creation processes?

There are no specific types of IP under the co-creation activities since we don't register any new IPs for the projects under the activities.

3. PROJECT EVALUATION

19*. Are milestones and key performance indicators (KPIs) set for the co-creation initiative?

No.

20*. At what stages is the evaluation implemented? (Please choose all appropriate answers): Ex-ante / Interim / Ex-post/ No evaluation procedure

Ex-post evaluation is implemented.

For each evaluation stage, please, provide the following information:

20A. What approaches are used?

Steering committee evaluates the projects at 4 points as feasibility, profitability, user perspective, contribution to society. The award program has started recognizing and celebrating outstanding projects since 2019.

In 2019, two projects were awarded. One is the excellent award, which is the most outstanding project among all reviewed entries from the working group and the other one is the special award, which is the best project in accordance with the specific theme, "Collection and utilization of user's behavior data using Artificial Intelligence Technology" was specified in 2019.

20B. What types of data are used?

We have 4 evaluation items: feasibility, profitability, value for users and impact on society.

20C. How is the evaluation process organised?

Who is responsible for it?

Are there any external evaluations conducted?

Steering Committee evaluates the projects annually.

Steering Committee chooses the prize winners among the projects.

Steering Committee is responsible for both. There are no external evaluations.

21. Are the evaluation results open (e.g. published on the website, reports, structured databases, etc.) or closed (used only for the internal goals)?

If they are open, please specify.

Only the results of the award program will be made public.

Due to the current situation caused by COVID-19, the award ceremony has been postponed, thus it has not been published yet.

22. What are the implications of any evaluations conducted so far (e.g., revision of KPIs; suspension or termination of funding; penalties and rewards associated to performance)?

Please explain.

Based on the result of evaluation, the project plan for the following year will be revised.

23. What are the key success factors of this co-creation initiative?

Implementing POC cycle in a short span of time, i.e. seeking potential collaboration among the members, formulating action plan, launching demonstration projects, establishing a research system, conducting POC and its feedback.

24. Were there any challenges during the co-creation process?

Please provide details and explain what caused them.

Until now, no serious challenges have arisen during the co-creation process. We expect the each working group to take initiative to deal with challenges.

25. Based on your experience, what would you recommend to a new co-creation initiative for it to be successful? Please explain the main lessons learned from your experience.

For the project to succeed, I think it is important to accept co-creation members' independence, distinctive approach and intrinsic motivation.

From our experience, the communication became more difficult due to having the broader focus. However, it was solved to emphasize their autonomy and create a hierarchical structure of sub-groups for working groups and projects to share interest.

4. THEMATIC FOCUS

Please select one of the two themes below and answer the corresponding questions:

Theme 1. Co-creation's contributions to digital innovation and AI and effects of data

sharing

Please explain:

- What are the ways in which the co-creation initiative features digitalization and AI? Please provide examples.

Building probabilistic models using machine learning from big data, a variety of machine learning-based software is provided and utilized at AI Technology Consortium.

- What are the roles of stakeholders?
Are they different from traditional ones?

Please provide examples.

Stakeholders have different roles in various projects.

They are sometimes different from traditional ones.

Adopting the community-based participatory (research) approach in the projects.

Under the working group leader, there are several project leaders who are voluntary and approved by the working group leader. Each project leader receives the necessary resources from the working group leader, but basically, the project leaders gather the project members from inside of the working group or outside of collaborators. The Project leaders formulate the demonstration experiment plan which is capable of collecting data. In the plan, the members who participate in the project play a voluntary role, and members are assigned not only to the technology providers but also to the technology users. The results of projects are reported and presented within the working group through the project leader. Outstanding project will be presented at both plenary session in the consortium and the external events. In some cases such as regional branches, the members who have originally connected each other lead the project team. In other words, a community-based participatory (research) approach that respects corporate culture and local culture.

- How are data sharing and intellectual property protection organised? Please provide details. All members in the consortium share their data with each other. We don't register any new IPs for the projects under the activities.

- What are your best practices?
What would you recommend to a new co-creation project involving digital innovation and AI?

Using AI technology, we have conducted large-scale data analysis on data collected from visitors to the exhibitions at Odaiba, Tokyo Big Site in Tokyo. The results of the analysis were

shared among the members, were developed to accumulate such experiences and knowledge.

5. POLICY CONTEXT

26*. Was the initiative supported by a specific policy initiative? If so, please provide details on the policy initiative and type of support provided (e.g. amount of funding, conditions of support, selection criteria, reporting obligations, etc.).

No.

27*. What are the factors (e.g. related to regulations, policy, business environment etc.) supporting and/or hindering co-creation in your country? Please explain.

Unclear ownership of data might hinder the sharing and utilization of data in the co-creation.

28*. What do you think are most effective types of policy support for co-creation?

Policy framework that aims to encourage sharing data and practices.

----- THANK YOU VERY MUCH FOR YOUR TIME -----

Name: Hideki KAWANO

E-mail: kawano-hideki@meti.go.jp

Location (country): Japan

Affiliation: Ministry of Economy, Trade and Industry

Your role in the co-creation process: Author

Your main activities in the co-creation process: Author