A Proposal for Open Science from standing point of collaboration with business

オープンサイエンスに向けた
ビジネス連携の観点からの提案

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Outline

1. Our standing point
2. Record Continuum Diagram, Open Data Ecosystem and Shaping type business strategy
3. Individual efforts on Data Providers
4. Inter-disciplinary Common Data Platform
5. Inter/ trans-disciplinary Collaboration Platforms for Social Problems
6. Incentive for Data Providers

1. Our stand point

- Our past presentations

#1: Action Items for Open Science from the view point of Inter/Trans-disciplinary Collaboration on Environmental Issues

#2: Cross-disciplinary collaboration platform -ubiDIAS

#3: Cross-disciplinary collaboration platform using MMORPG technology – Virtual museum of Art and modern history.

#4: Today

(#5: Desirable Data Policy for Open Science – Case study of environmental data) -> next WS

1. Our Standing point
- Differences of view points

- Traceability/ Transparency
- Data Management Plan of Data Depository
- Open Access
- Open Publication
- Reuse of research data
- Citizen Science

- Social Problems/ SDGs
- Social ripple effect of research outputs
- Business is needed to role successful cases out
- Seeds-needs matching between researchers and private sectors
- Incentive for Open Data /Evaluation of researcher

So, our proposal is not including many topics discussed yesterday.

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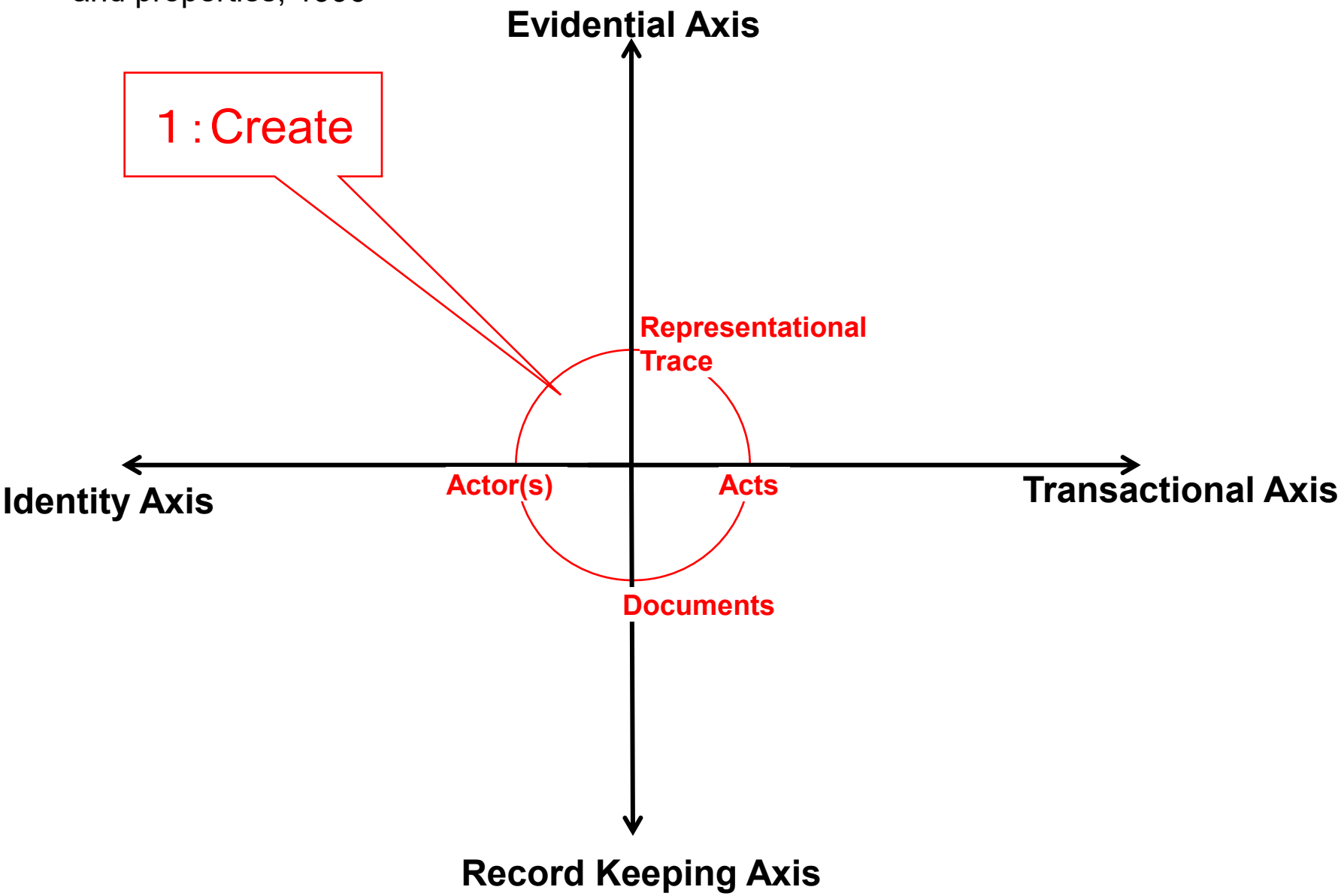
Records Continuum Diagram

Frank Upward, Structuring the Records Continuum - Part One: Postcustodial principles and properties, 1996



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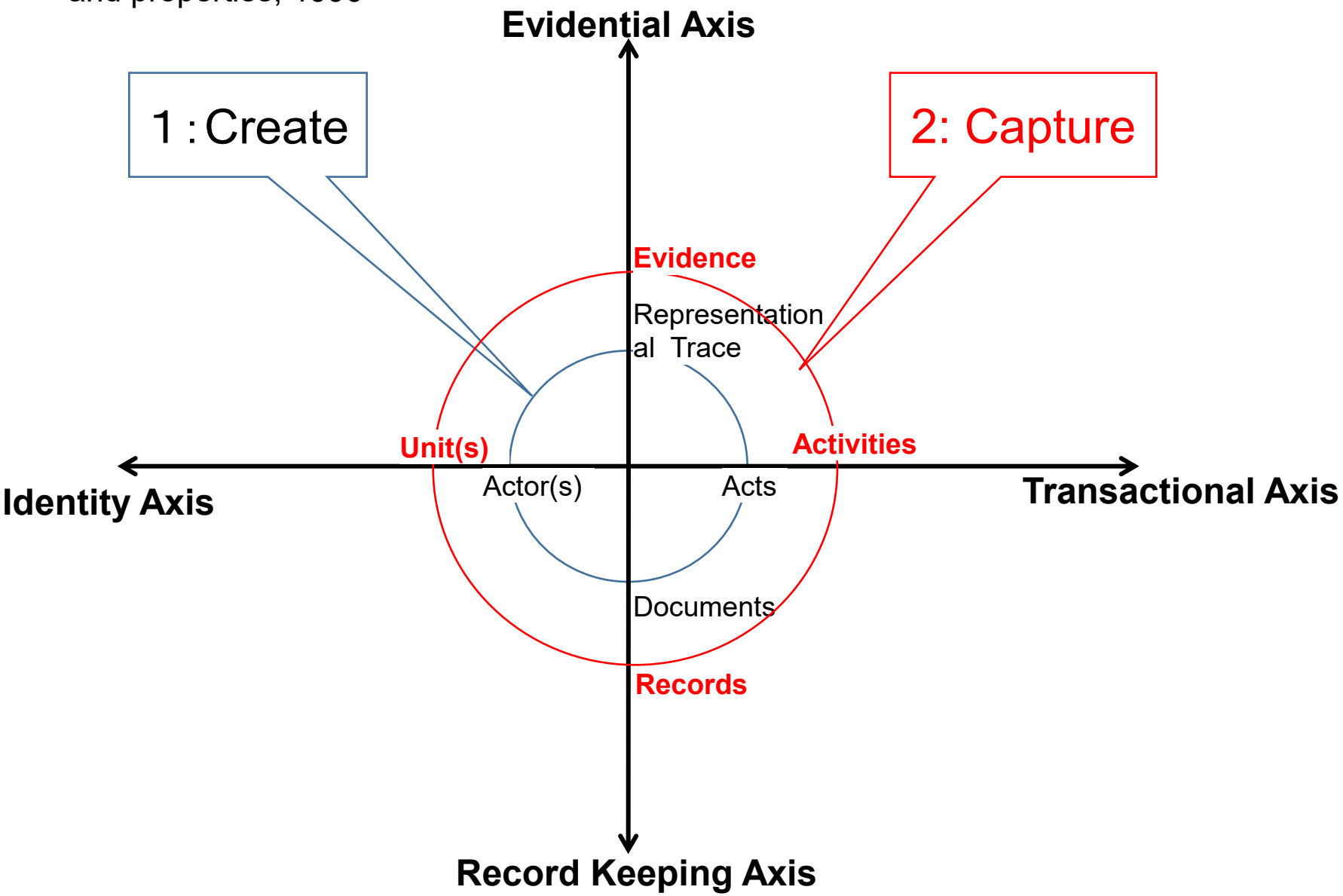

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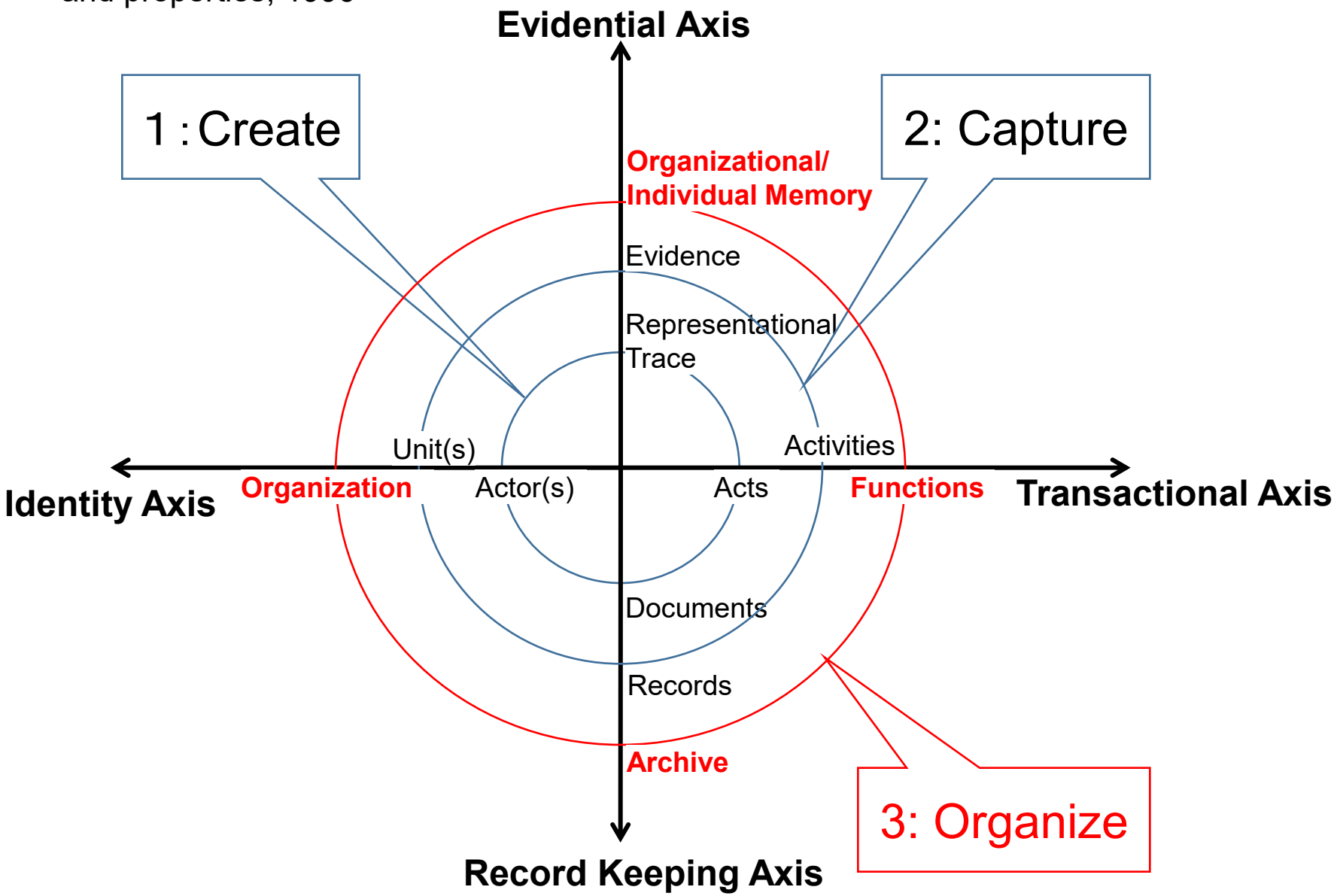

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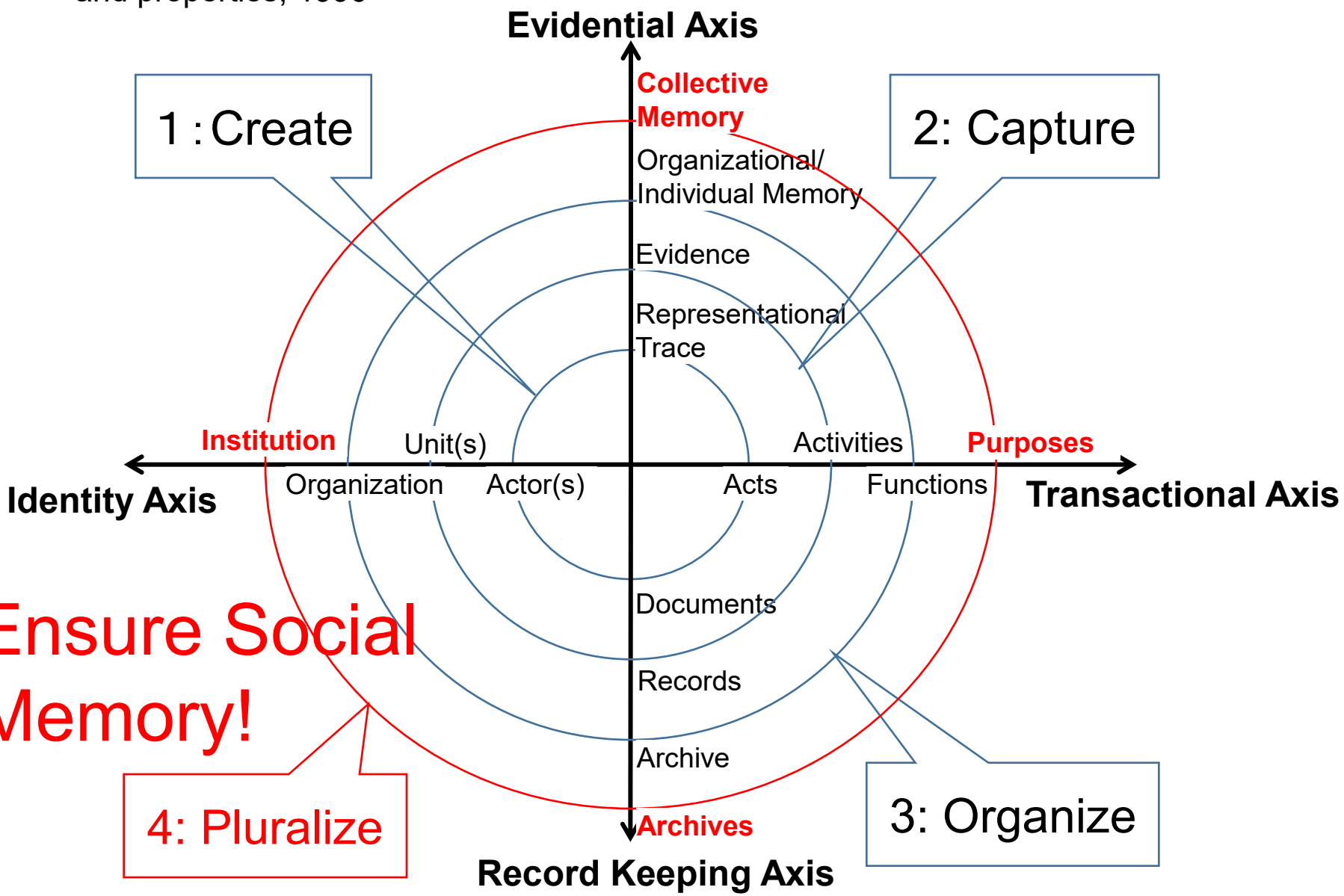
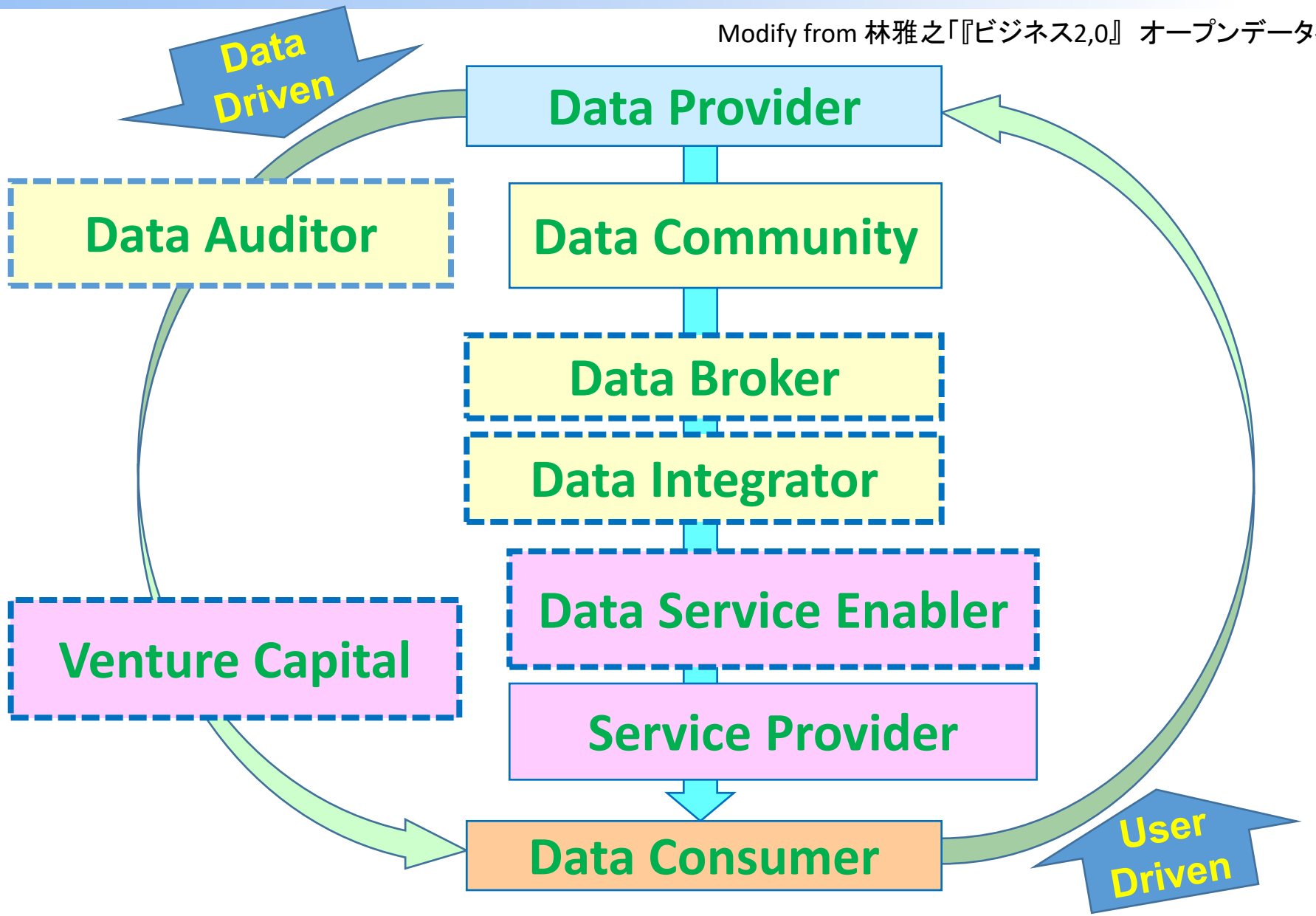


Players and Platforms in Data Ecosystem

Modify from 林雅之「『ビジネス2,0』 オープンデータ社会」



Ecosystem: Healthy revenue circulation by interaction between Players

Players and Platforms in Data Ecosystem

- Various players gradually grown up in accordance with growth of open data utilization.
- Data Driven: Two big data providers of meteorology data and geospatial data developed big data market. But from business view point, almost public research data are not provided for business use.
- User Driven: User knows needs and doesn't know the solution. So there are so many small Service Providers who close to each User.
- Above two driving forces are not enough for self-sustaining circulation of data utilization. Common platforms are need to improve efficiency of data utilization.
- How to initiate new inter/ trans-disciplinary data market?

Shaping type business strategy

Business Strategy Pallet — Martin Reeves, et al., Your Strategy Needs a Strategy, 2012

Predictability \ Malleability	Low	High
Low	Adaptive	Shaping
High	Classical	Visionary

"**Predictability**": How far into the future and how accurately can you confidently forecast demand, corporate performance competitive dynamics, and market expectations?

"**Malleability**": To what extent can you or your competitors influence those factors?

Shaping type: Low Predictability but high Malleability

- A shaping strategy focuses beyond the boundaries of their own company, often by rallying a formidable ecosystem of customers, suppliers, and/or complementors to their cause by defining attractive new markets, standards, technology platforms, and business practices.
- They propagate these through marketing, lobbying, and savvy partnerships.

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3. Individual effort of Data Providers

- Dataset document page which can be found by web search engine is essential than Data DOI.
- Use common language and provide visualization tools for users in other disciplines or educational use.
- Not only indexing but also structuralization/ curating of own data-sets based on community's discipline.
- Data Policy considering for private sectors' use. (-> next WS)
- Use cloud service or common data platform which developed DMP for data storage to avoid technical problem like security.

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4. Inter-disciplinary Common Data Platform for social knowledge

- Individual efforts on Data Portal in various fields using meta-data should be encouraged.
- Mutual recognition between relating Data Portals for single sign-on is necessary.
- Wikipedia is already one of models of common knowledge platform using common language/ citizen language.
- Structuralization/ curating using Academic Disciplines of Wikipedia is one of ideas due to it is sometime dramatically updated.

Academic Disciplines (Wikipedia- 2017)

https://en.wikipedia.org/wiki/Outline_of_academic_disciplines

Arts: Performing arts, Visual arts

Humanities: Geography, History, Languages and literature, Philosophy

Social sciences: Economics, Law, Political science, Psychology, Sociology

Sciences: Biology, Chemistry, Earth and space sciences, Mathematics, Physics

Applied Sciences: Agriculture and agricultural sciences, Computer sciences, Engineering and technology, Medicine and health sciences

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5. Inter/ trans-disciplinary Collaboration Platforms

- Inter/ trans-disciplinary collaboration will be initiated in depend on social urgency.
- Learning from past, overview present, modeling and future projection is basic strategy useful for various problem.
- Communication and information sharing platform is needed to collaborate Inter/ trans-disciplinary beyond existing community.
- Private sectors also think open own data, standard, tools, etc. is useful for forming new community.

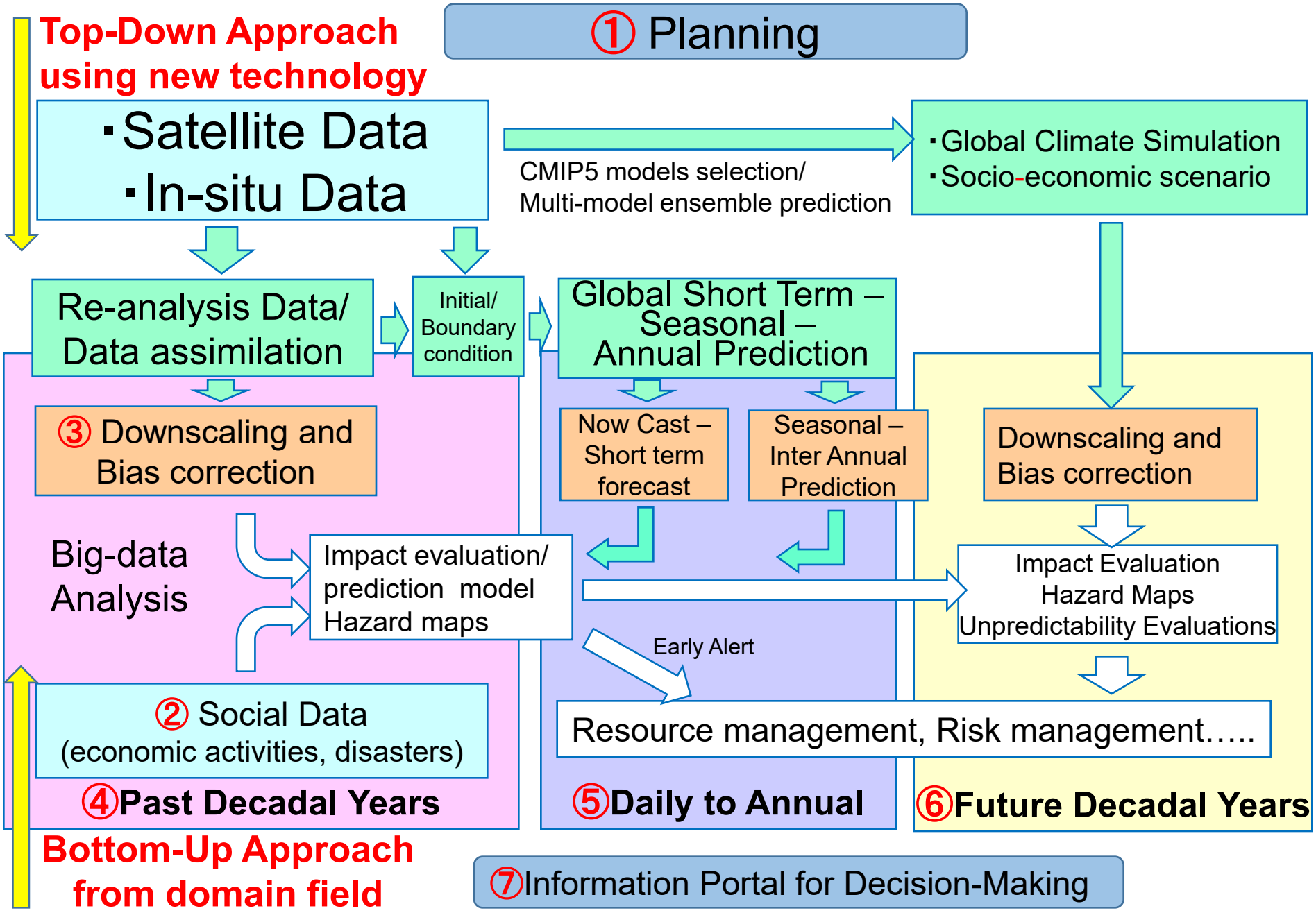
Where do we come from?

What Are We?

Where are We Going?

Paul Gauguin 1897-98

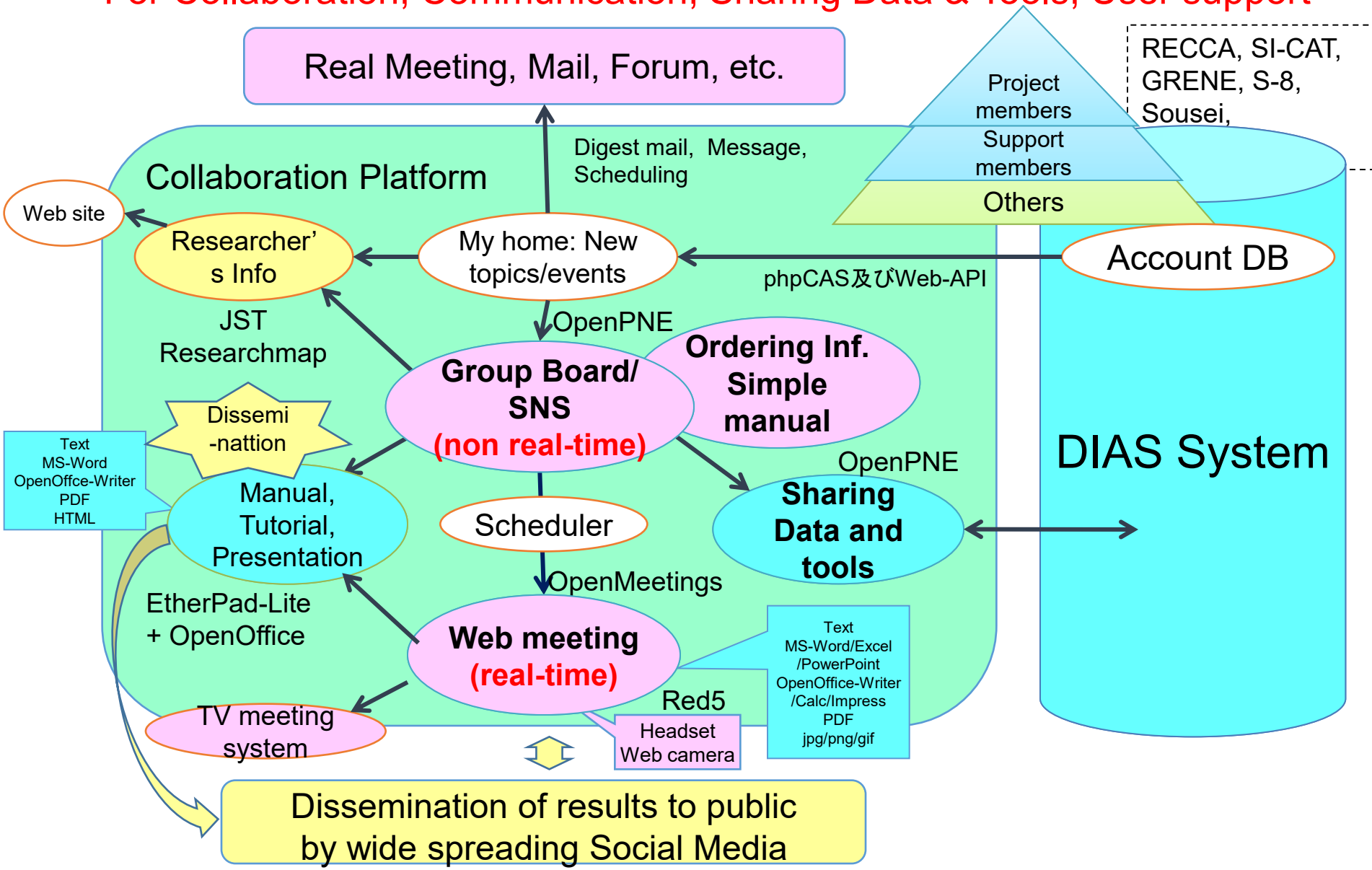
Top-down/ Bottom-up approach for Environment Issues



Cross-disciplinary Collaboration Platform：ubiDIAS

Ubiquitous (anytime, anywhere, anybody) + DIAS

For Collaboration, Communication, Sharing Data & Tools, User support



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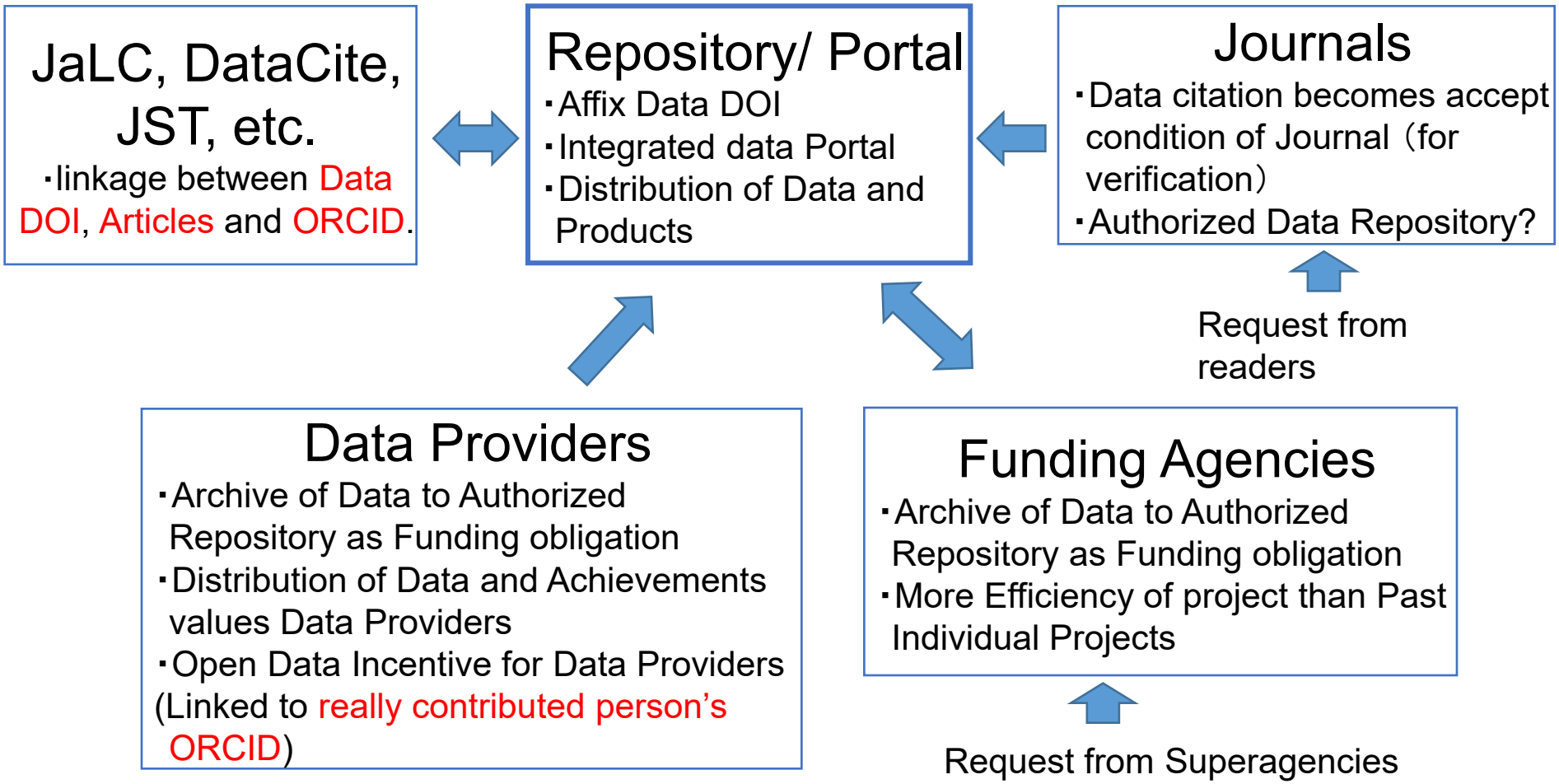
Data DOI is only start point

—Players' role on open data incentive for Data Providers—



6. Incentive to Data Providers

- Data DOI is only useful for data cited by academic papers. Social Ripple Effect should be evaluated not only by academic value but also other value.
- Seeds-needs matching platform including following functions is necessary;

  - getting contribution/ donation from private sectors

  - representative charging system.

- There are private sectors who think to open own data is a chance for forming community.

Conclusions

1. We proposed strategies from standpoint of socio-economic ripple effect in consideration with players of data ecosystem.
2. Data providers and data portals need to use common language, visualization and structuralization toward forming social knowledge.
3. Inter/ trans-disciplinary collaboration platforms for communication, information sharing, seeds-needs matching, getting private sectors' contribution and community forming.
4. Data DOI is only start point and socio-economic contribution also should be evaluated.