



Press Conference President of JST

April 18, 2013

Japan Science and Technology Agency

The background of the slide features a large, light blue JST logo. The logo consists of the letters 'JST' in a stylized font, with a blue swoosh that starts from the bottom left, goes around the letters, and ends at the top right. A solid red circle is positioned at the top of the swoosh, above the 'T'.

Innovation Creation through Big Data

FY 2013 Key Initiatives

- Innovation Creation through Big Data -

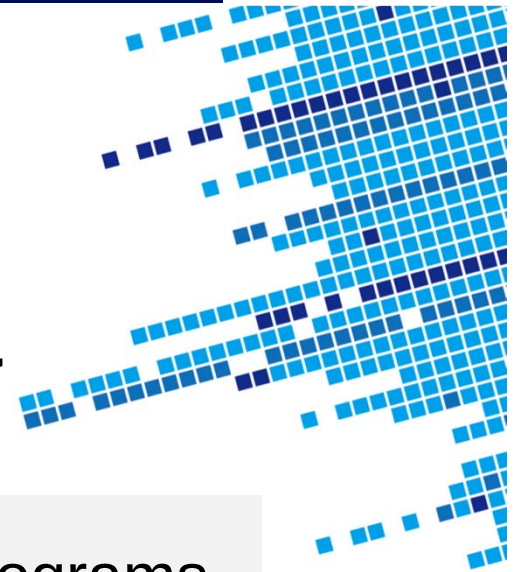
Building infrastructure for harnessing big data

Seeds of New Technology

Strategic Basic Research Programs
CREST, PRESTO

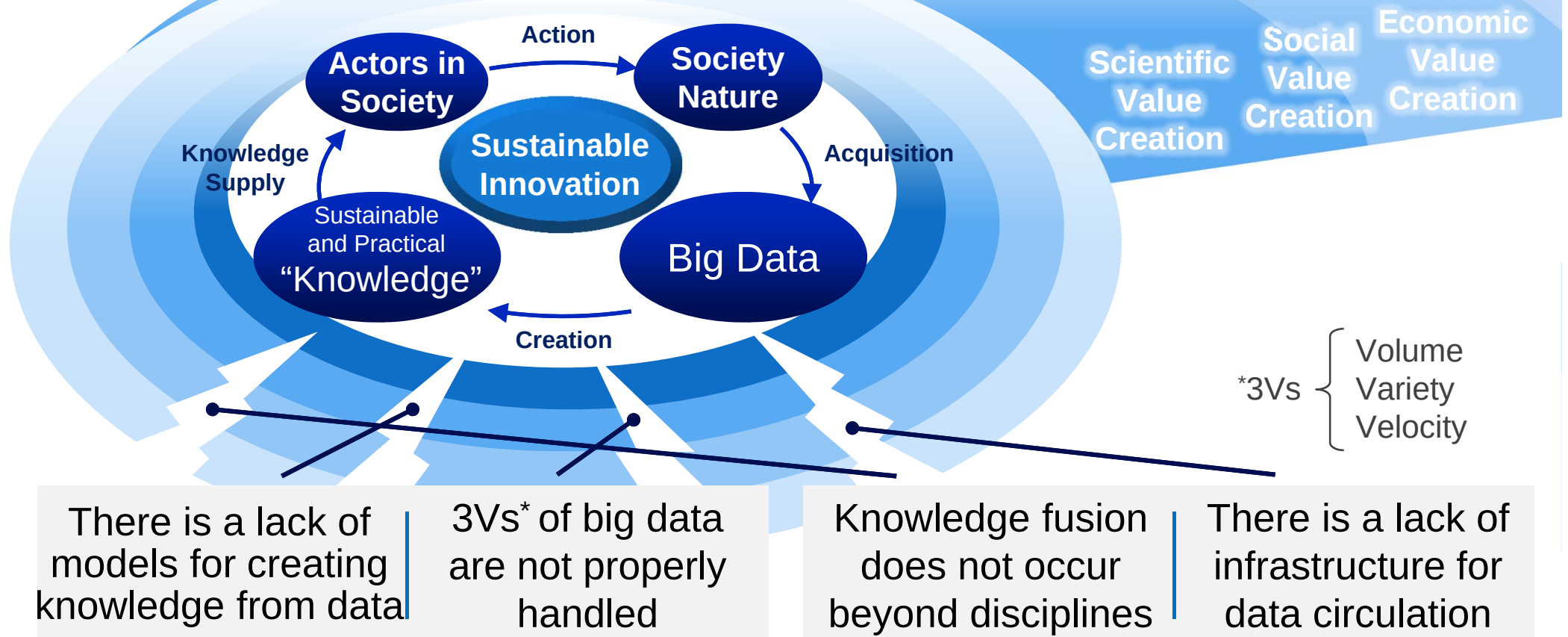
Scientific Knowledge Infrastructure

- Dissemination of Scientific and Technological Information
- Promotion of the Integrated Use of Life Science Databases (NBDC)



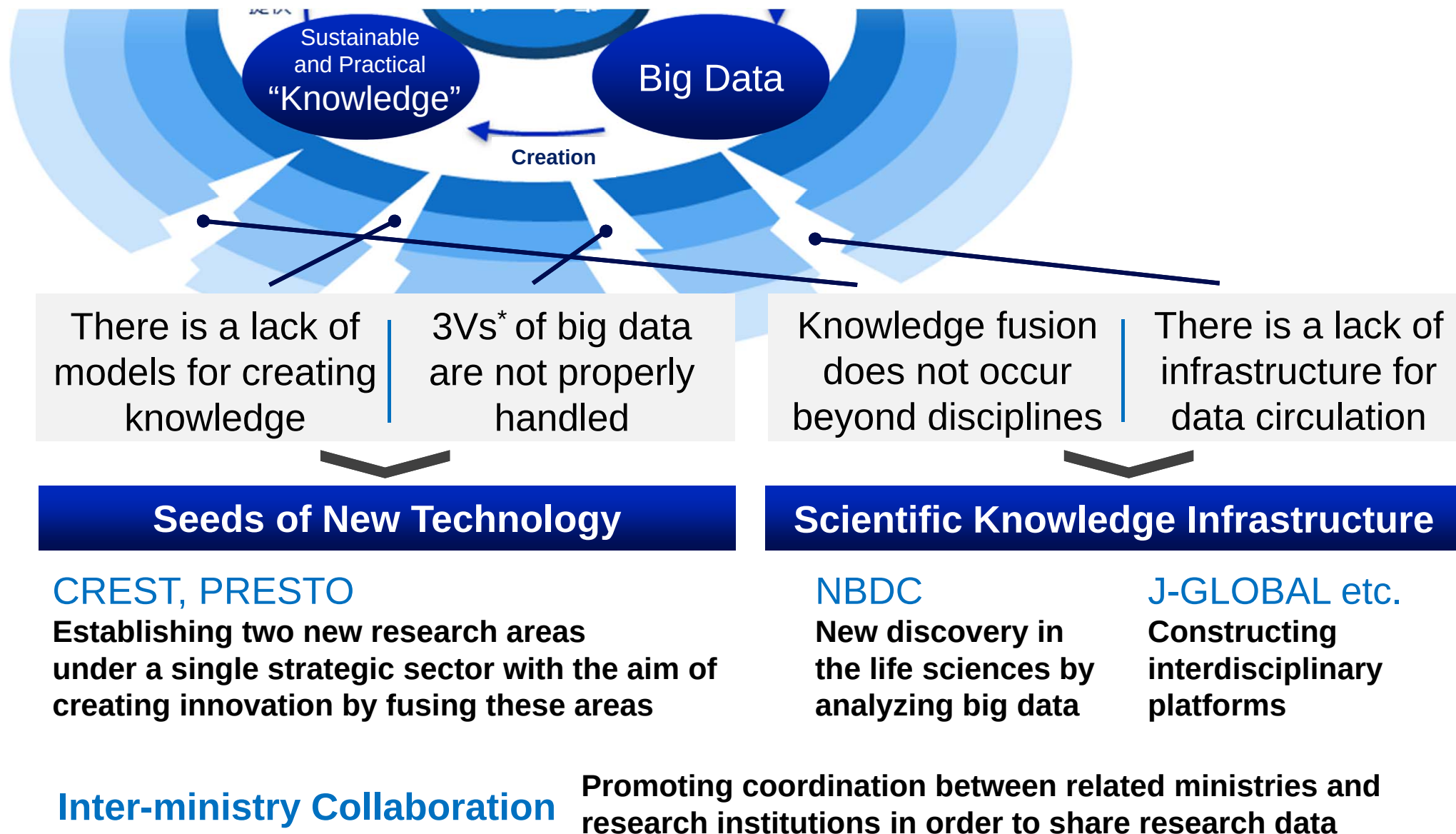
Innovation Design in the Big Data Era

Eliminating obstacles to integrating big data
into the sustainable circulation
of scientific and technological innovation



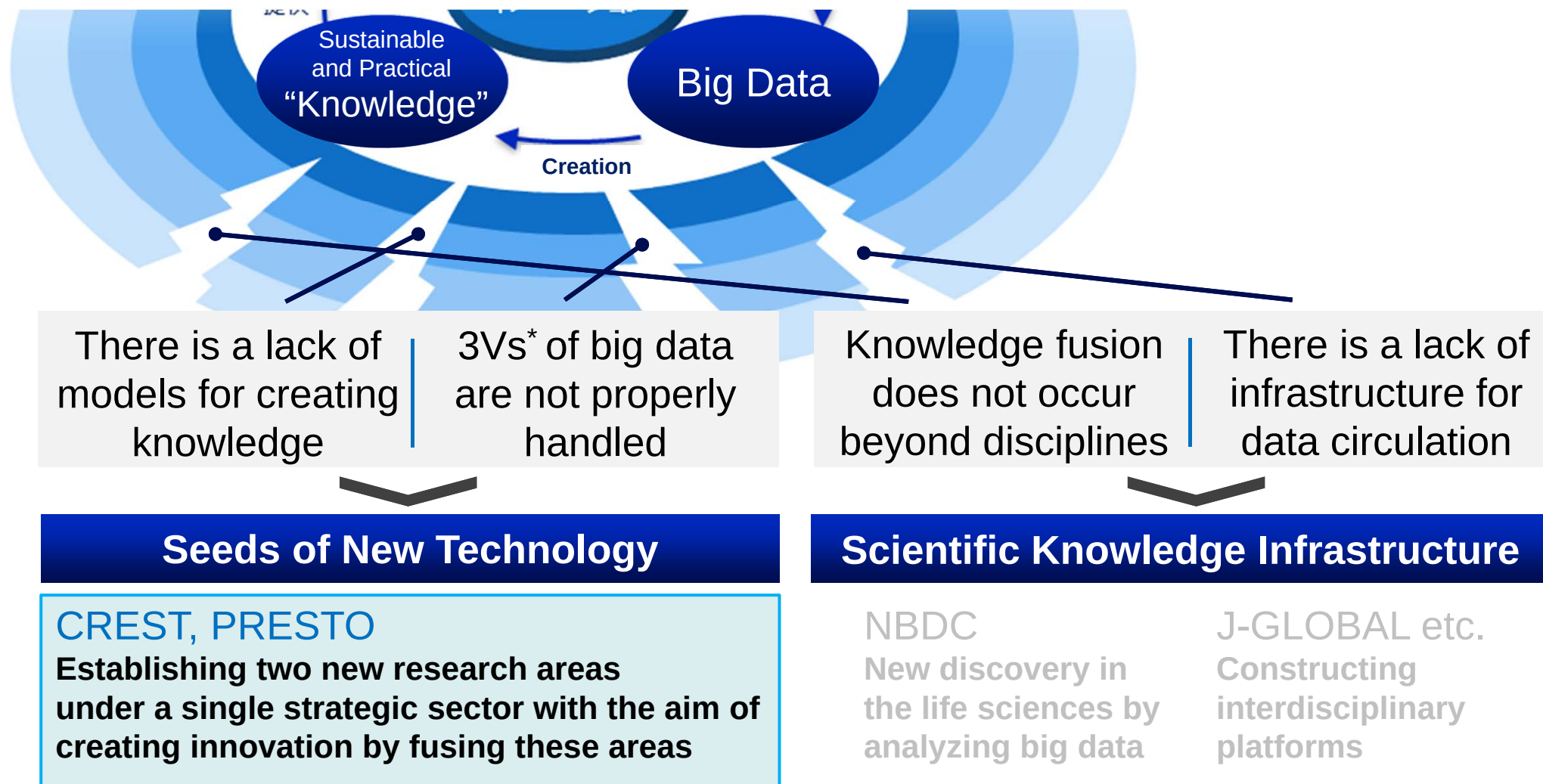
FY 2013 Key Initiatives

- Innovation Creation through Big Data -



FY 2013 Key Initiatives

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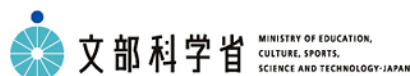
Inter-ministry Collaboration

Promoting coordination between related ministries and research institutions in order to share research data

Seeds of New Technology

Establishing Two New Research Areas under a Single Strategic Sector

Strategic Sector



Creation, advancement, and systematization of innovative information technologies and their underlying mathematical methodologies for obtaining new knowledge and insight from the use of big data across different fields

Objectives to be achieved - 1

Creation of advanced application technologies for developing the use of big data in various fields

Objectives to be achieved - 2

Creation of advanced core technologies for the integration and analysis of big data

Research Area-1: Big Data Application

CREST

Advanced application technologies to boost big data utilization for multiple-field scientific discovery and social problem solving



Research Supervisor

Yuzuru Tanaka
(Professor, Hokkaido University)

Research Area-2: Big Data Infrastructure

CREST & PRESTO

Advanced core technologies for big data integration



Research Supervisor

Masaru Kitsuregawa
(Director General,
National Institute of Informatics)

Value Creation through Big Data

《Environment & Energy》 《Medical Care & Health》 《Resilience & Safety/Security》

Research Area-1: Big Data Application

Investigation
into gene-
disease
associations

Forecast for
infectious
virus
strains

Marine
resources
research

High
resolution
Earth model

Prognostics
for infrastruc-
ture

...

Data Sharing

New Technology
Supply

Research Area-2: Big Data Infrastructure

Big data
management

Data
compression,
hiding,
anonymiza-
tion

Cloud
computing
technology

Mathematical
model

Machine
learning

Visualization
techniques

“Big Data”

Genomic
data

Medical
data

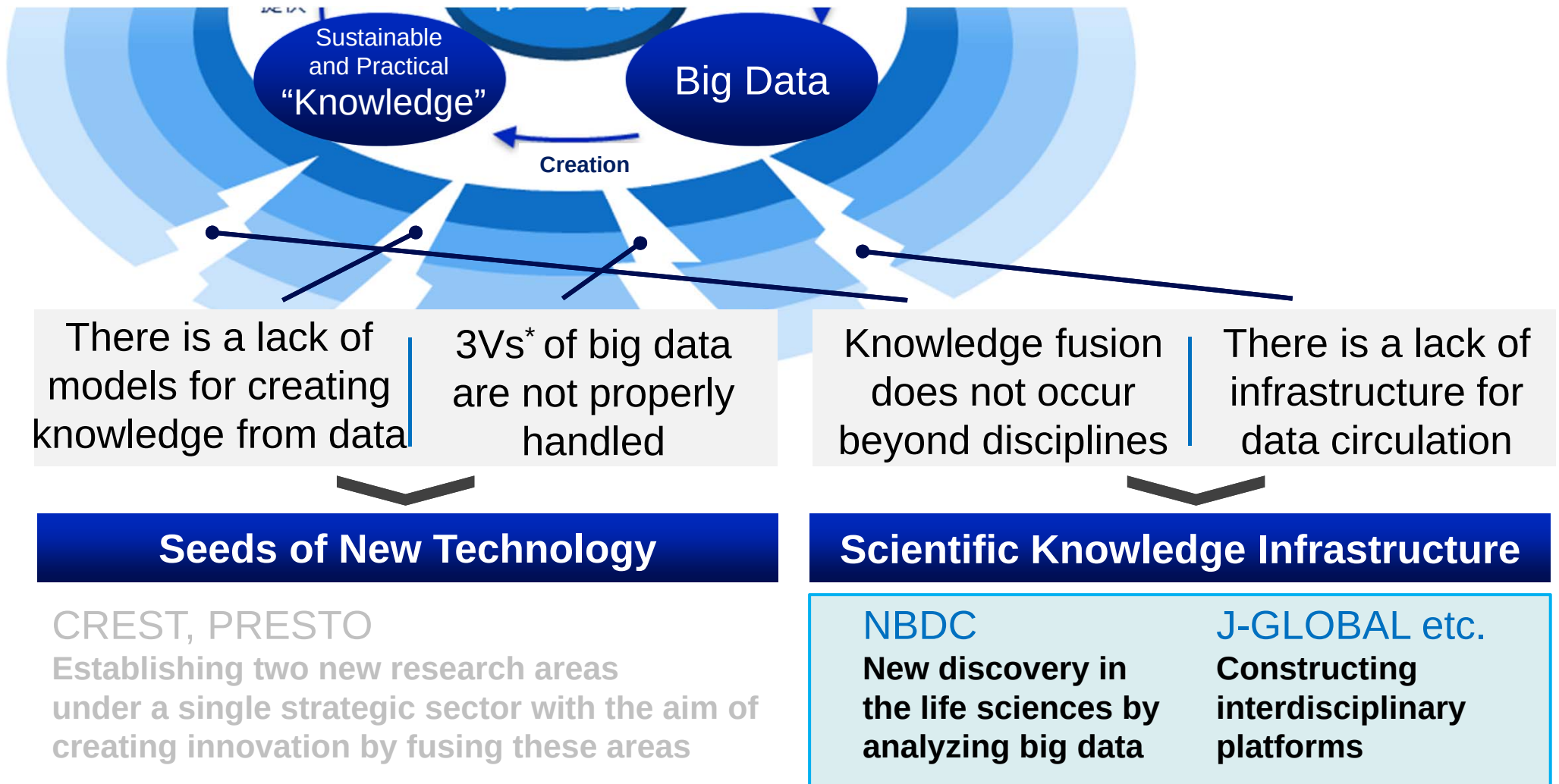
Environmental
data

Urban
traffic data

Agricultural
data

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Inter-ministry Collaboration

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Promotion of the Integrated Use of Life Science Databases



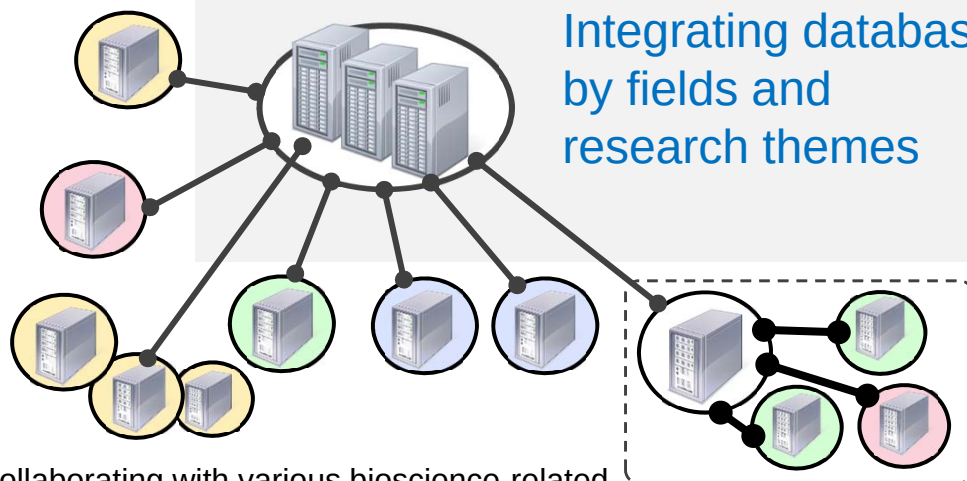
Providing information infrastructure for big data to serve drug development and improvement of breed

- Integrating over 1,000 databases in the life sciences to maximize their value
- Contributing to both Japanese and international users

National Bioscience Database Center (NBDC)

Established on April 1, 2011

Integrating databases
by fields and
research themes



Collaborating with various bioscience-related databases in Japan and overseas countries



- Sharing research outcomes in the life sciences
- Promoting effective and efficient research
- Invigorating the life science research

Constructing Interdisciplinary Platforms

Providing platforms for harnessing scientific data (images, measurement data) with interdisciplinary platforms of researchers, papers, etc. at the core

Tagging



Over 100,000 photographs

Similarity search
Automatic classification



- Single-family house
- Damaged
- Retaining wall
- Debris
- Building foundation
- Wooden construction

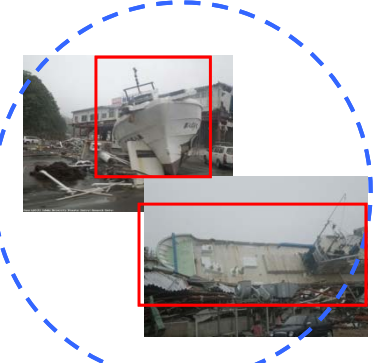
Tagging for researchers



Buildings



Automobiles



Ships

Arrange, classify, and
systematize images etc. from
a professional viewpoint

Further application to the automatic
judgement of the extent of damage



みちのく震録伝
東北大学アーカイブプロジェクト

- Data provision
- Evaluation



Utilization and enhancement of the keyword dictionary JST
has developed (scientific and technological thesaurus)

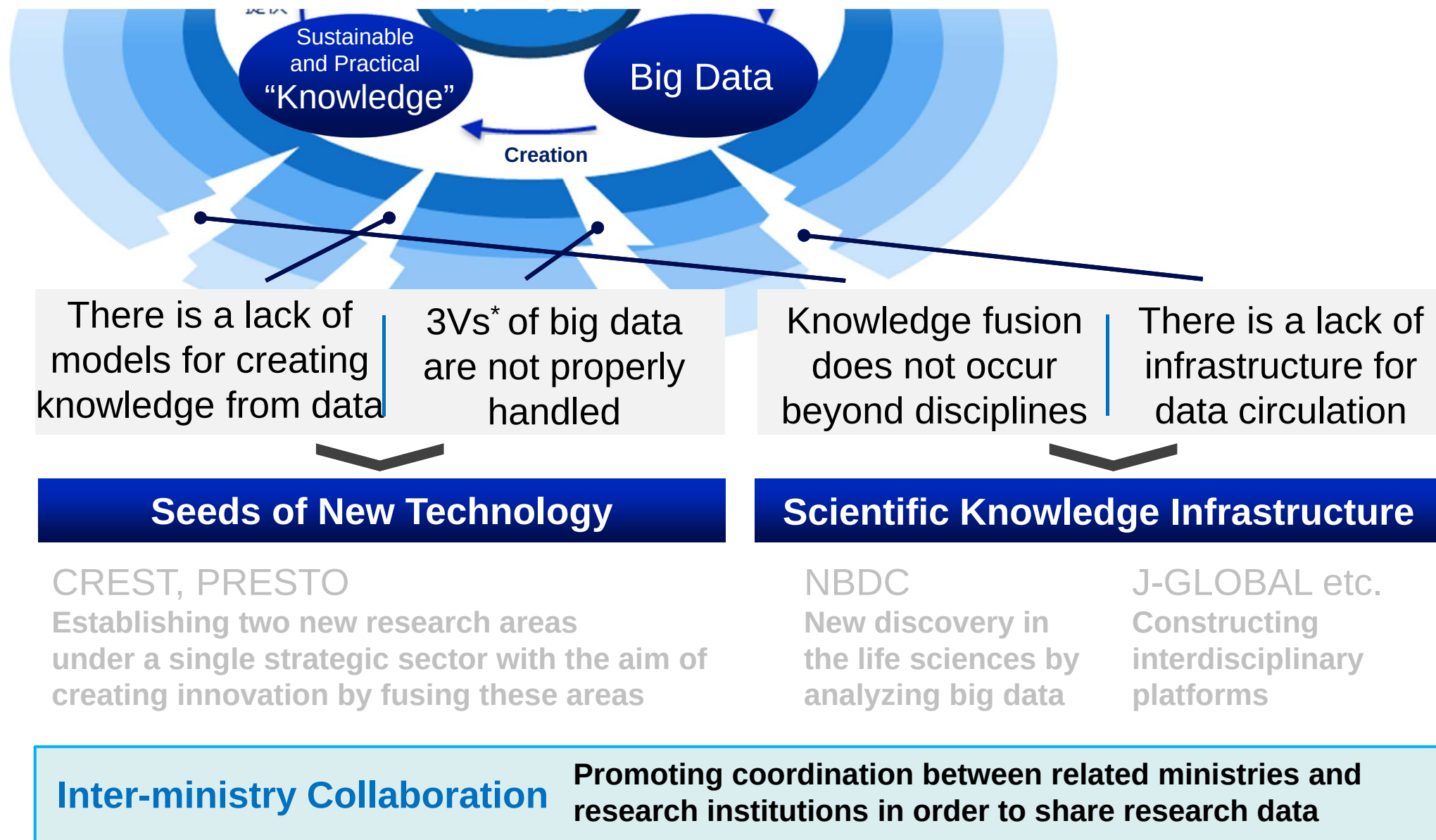
Planned for 2013

In future

Linking with other
information resources
such as papers

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National Bioscience Database Center

Integrating over 1,000 research
databases in the life sciences

**Four-ministry
collaboration**



Japan Link Center



Providing a permanent access to
Japanese electronic scholarly contents

In collaboration with:

National Institute for Materials Science (NIMS)
National Institute of Informatics (NII)
National Diet Library (NDL)



The Great East Japan Earthquake related archive

Collecting and providing
disaster-relevant multimedia
data for professional use



WORLD DATA SYSTEM

World Data System (WDS)

Enhancing cooperation with the
National Institute of Information
and Communication Technology
(NICT), one of the participants in
the international initiatives for
data circulation (WDS, CODATA)



National Science Foundation, US

Studying a future Japan-US
research partnership as to
disaster-related big data, of
which a joint workshop will
be held in May 2013

FY 2013 Key Initiatives

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Leading “Top Science” into “Top Innovation”

《Prioritizing research towards value creation in society》



Seeds of New Technology

CREST, PRESTO

Establishing two new research areas
under a single strategic sector with the aim of
creating innovation by fusing these areas

Scientific Knowledge Infrastructure

NBDC

New discovery in
the life sciences by
analyzing big data

J-GLOBAL etc.

Constructing
interdisciplinary
platforms

Inter-ministry Collaboration

Promoting coordination between related ministries and
research institutions in order to share research data