

Current Status and Future of  
S&T Information Service in Korea :  
KISTI Service 3.0

2014.10.13

Hee-Yoon Choi

# CONTENTS

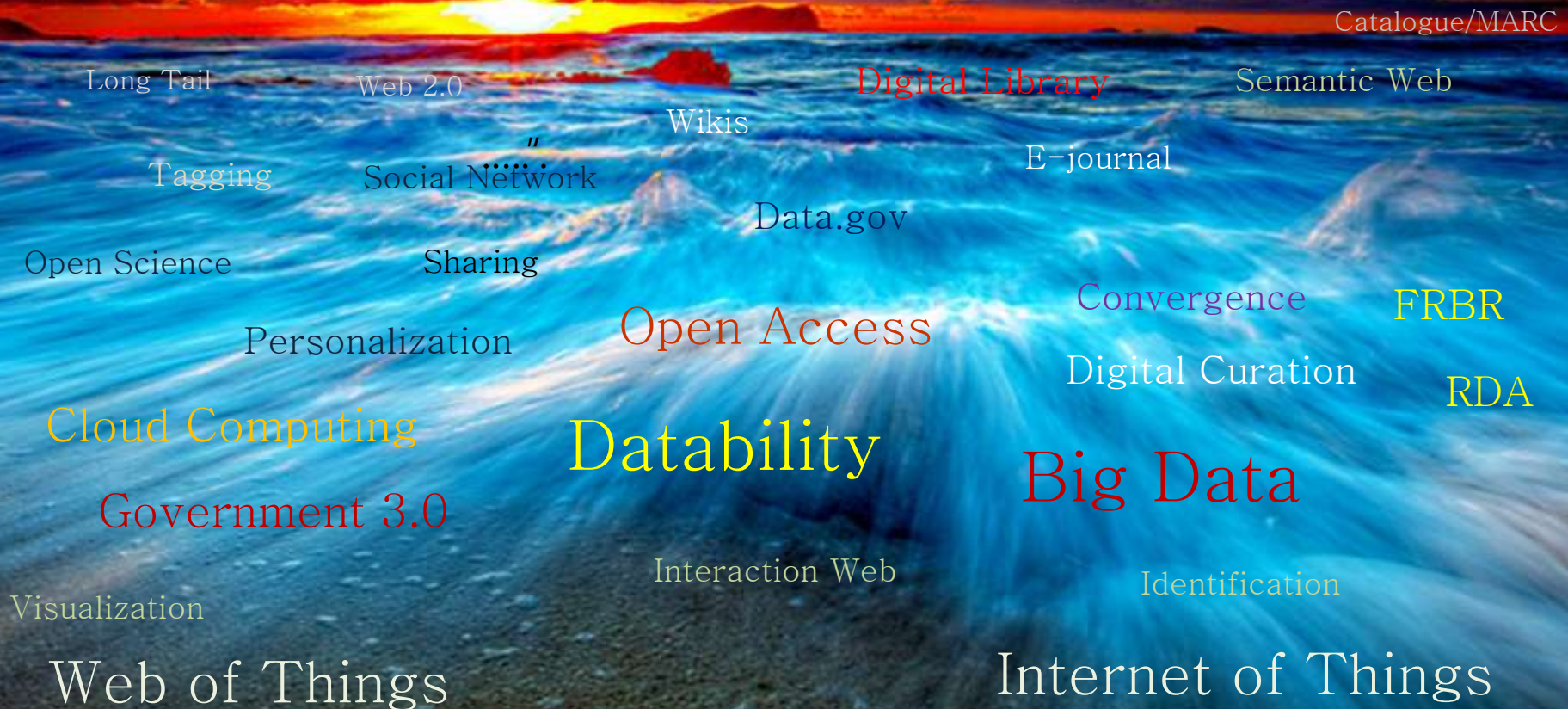


- I Information Environment
- II About KISTI
- III KISTI Service 3.0
- IV Future Remarks



# Continuous Waves of Change (1)

I . Information Environment



Catalogue/MARC

Long Tail

Web 2.0

Wikis

Digital Library

Semantic Web

Tagging

Social Network

E-journal

Data.gov

Open Science

Sharing

Convergence

FRBR

Personalization

Open Access

Digital Curation

RDA

Cloud Computing

Datability

Big Data

Government 3.0

Interaction Web

Identification

Visualization

Web of Things

Internet of Things



4<sup>th</sup> R&D Paradigm

Open Data  
Movement

Data.gov  
Science.gov

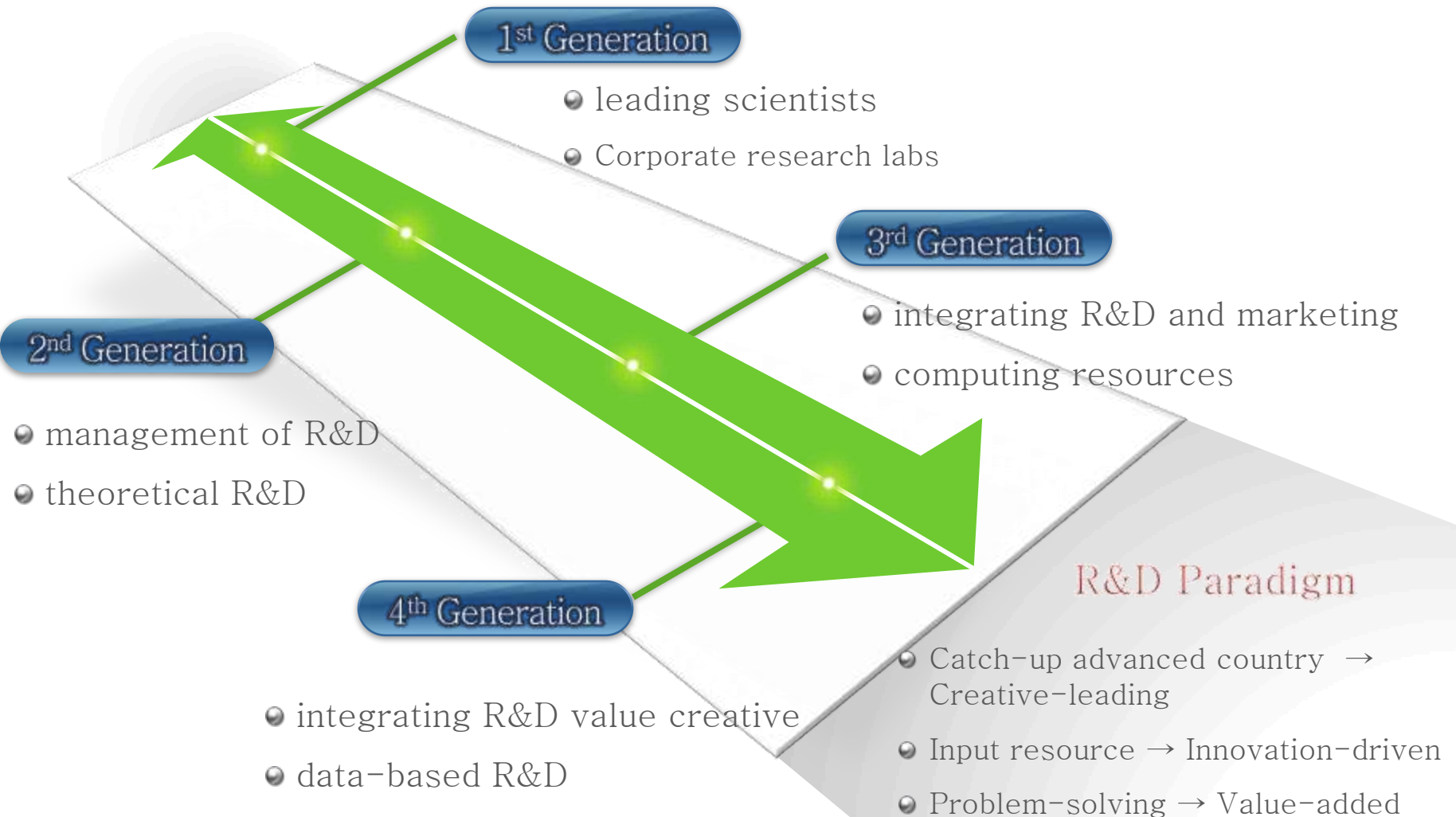
gov2.0



Mobile Computing  
Social Networking  
Cloud Services  
Personalization







## Obama's Transparent & Open Government Policy

- Big Data Initiatives
  - \$200 Million in New R&D Investments
- Open Data Initiatives
  - Open Government Platform: data.gov, apps.gov



## NTIS National Technical Information Service

- Promote further use of an agency's content : FSRS\*
- NTRL 3.0\*\* Service: offers significant advantages with highlights
- Gateway to government science : 'Science.gov'

\* Federal Science Repository Service

\*\* National Technical Reports Library



## British Library

- leading hub in the global information network
- Innovation knowledge infrastructure
- Problem solving with convergence research



## JST & NII

- R&D strategies for creating S&T innovation
- Solve social problems through convergence research
- NII : SINET 3('07)  
→ SINET 4\*('11)

\* Science Information NETwork 4



## Personalized & Recommendation Service

- Management of individual research product and references
- Detection and Recommendation of research item and funding info
- WoS, Endnote, RefWorks

## Citation Analysis

- Journal Impact Factor, Self Citation, Eigenfactor
- Cited Reference Searching, Cited Map, Citation Reports, Citing Article Network
- ISI, Scopus, JCR



## Deep Indexing

- Indexing and Searching of Table, Picture, Graph, Map, Figure in the fulltext
- Image Processing & Multimedia Indexing Technology
- CSA Illustrata (ProQuest)

## Researcher ID

- Distinguishing author name and each research activities from those of others
- Collaboration Network
- ResearcherID (Thomson Reuters), Scholar Universe (ProQuest), LinkedIn, ORCID



1960

1962.1 : KORSTIC was founded

1980

1982.1 : KORSTIC was reorganized as KIET

1990

1991. 1 : KINITI was founded

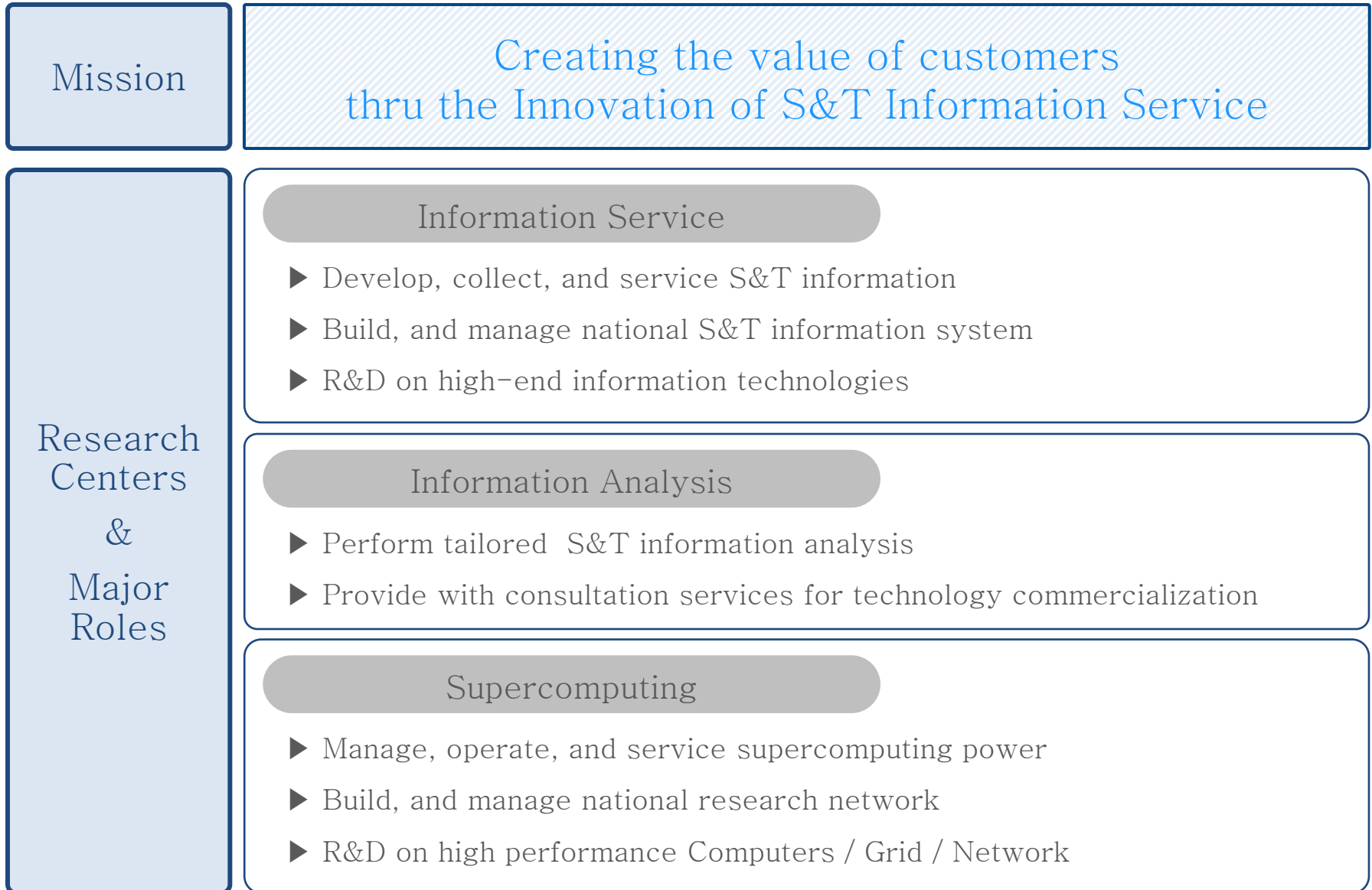
1993. 3 : KORDIC was founded

1999.10 : Supercomputing Center was merged with KORDIC

2000

2001.1 : KISTI was founded

By merging KINITI & KORDIC



- collects, processes, manages, and services an array of S&T information to support researchers

## ▶ Building and Integrating

- the key S&T information resources
- the outputs of national R&D projects



## ▶ Providing the information to users through

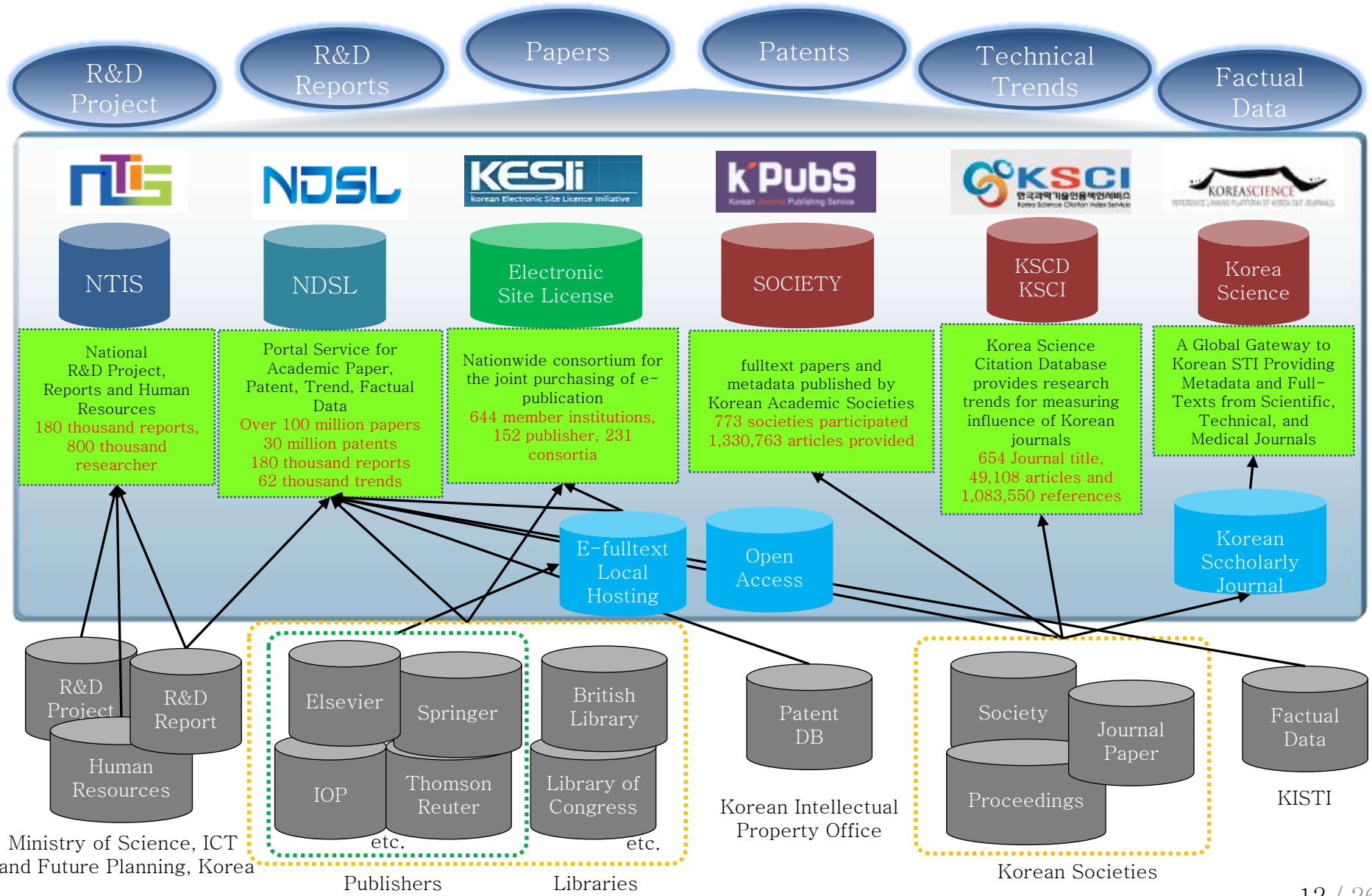
- NDSL (National Digital Science Library)
- KoreaScience
- NTIS (National Science & Technology Information Service)



## ▶ Enhancing the quality of contents & services thru the research & application of new information technologies like

- Object Identification Technology and Authority Control Methodology
- Knowledge Representative and Linkage

# Scholarly Information Services



← 1962~2001      2001~Present →

**KISTI Service (~ 2001)**

- Information retrieval service Initiative
- THECNOLINE(1975)
- KIETLINE(1982)
- KIROS\*(1985)
- KRISTAL\*\*(1995)

**KISTI Service 1.0 (2001 ~ 2007)**

- STI Collection & Processing
- STI Retrieval Portal Service

Retrieval Service

**KISTI Service 2.0 (2008 ~ 2013)**

- Share/Participate/Open
- NDSLService
- Global Service
- NTIS Service

Open, Link & Integrate Service

**KISTI Service 3.0 (2014 ~)**

- Data based Problem solving
- Analytic, Linked, Personal, Recommend Service

Information Analytic Service



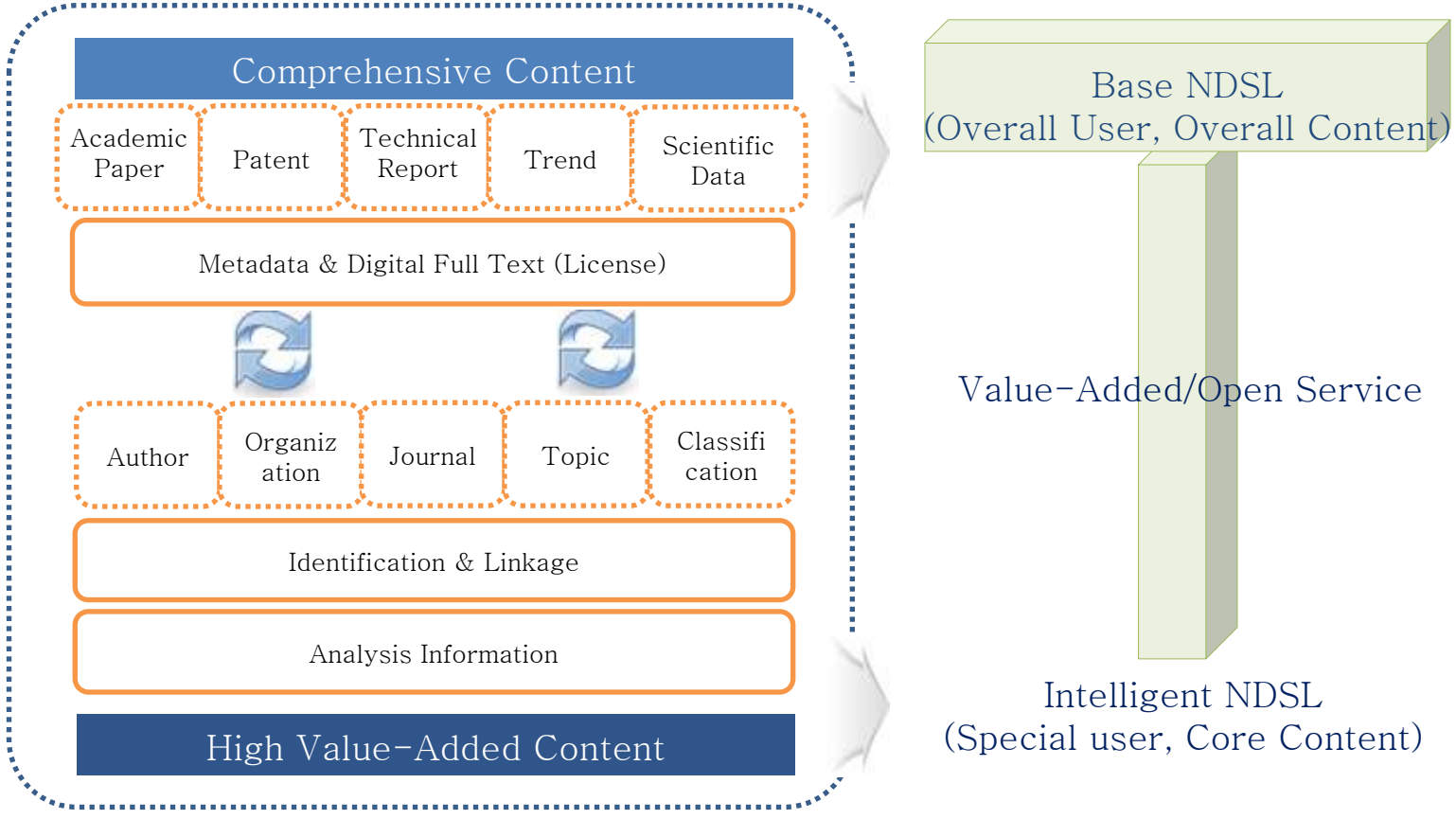
\* Korean Information Retrieval Online Service  
 \*\* Knowledge Retrieval In S&T Affiliated Literatures





## KISTI Service 3.0

STI Service Strategy for enabling Knowledge Discovery and Insight supporting R&D Life Cycle



### AS-IS

- A National Gateway to Domestic/Foreign S&T Information providing Metadata and Full-Text by KISTI and E-Journal Consortium
- Linkage Service of Scholarly Articles, Patents, Research Reports, Trend and Factual Data
- Development of Identification Technology and Authority Control Methodology
- S&T Information Sharing by NDSL Open Service
- Promotion of Mobile App and Social Network Service

### TO-BE

- Expansion of S&T Base Content through Collaborating with KISTI's Partners and User Participation
- Intelligent Content through Identification, Linkage of S&T Content and Identification Data like Author ID, DOI
- Convergence of S&T Intelligent Content and Information Analysis Technology
- Intelligent Service for Creating Value of Creative Customer
- User participation Open Platform for Sharing Ideas, Data and Applications

## 4C : Successful “KISTI Service 3.0” Strategy

C  
Creation

Creation of  
Customer Value &  
New Business  
Model through  
Open Platform

C  
Collaboration

Collaborative  
partnership with  
Library, Industry,  
Publisher, Academic  
and Research  
Institution

C  
Convergence

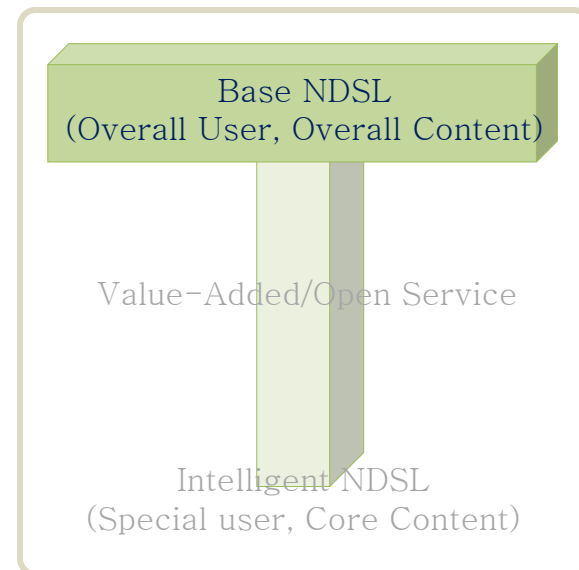
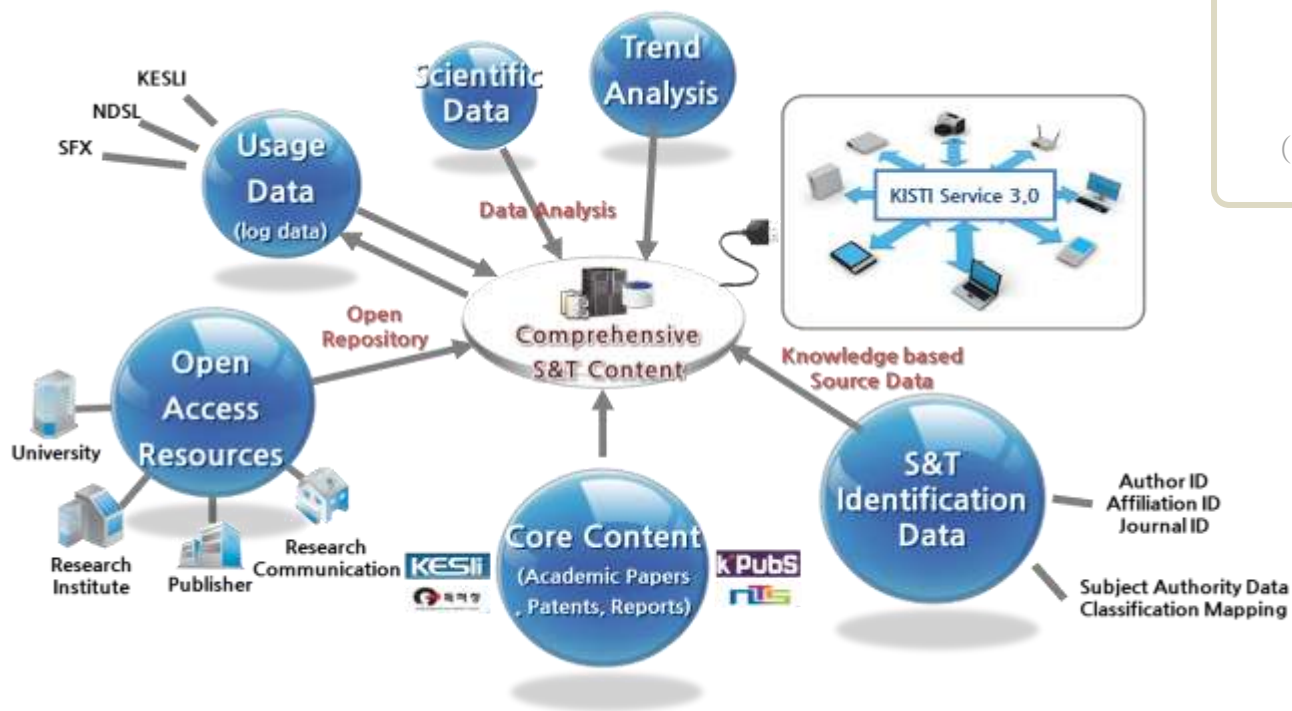
High Value-Added  
Content through  
Convergence of  
Intelligent Content and  
Technology

C  
Confidence

Confidence in S&T  
Content and Service  
through  
Data Sustainability and  
Responsibility

## S&T Base Content : Comprehensive Aspect

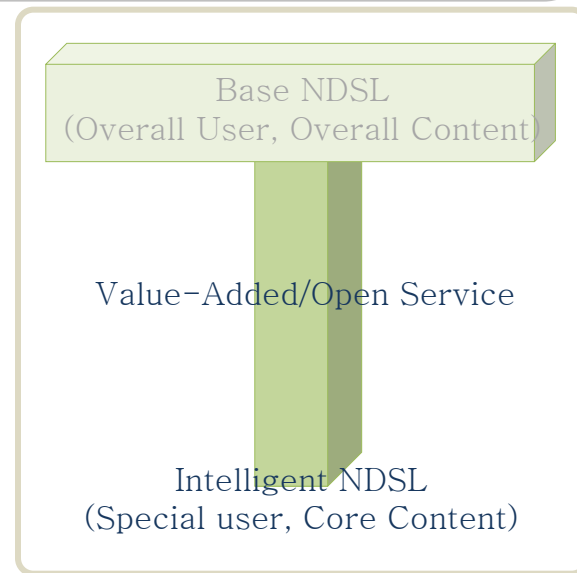
- Expansion of S&T Content Coverage
  - Most Common Resources, Open Access Resources, SCI, SCIE, etc.
- Provide Various S&T Content
  - Scientific Data, Usage Data, Trend Analysis Report, etc.
- Collection & Linkage through Collaborating with Institutions





## S&T Intelligent Content : Identification & Linkage

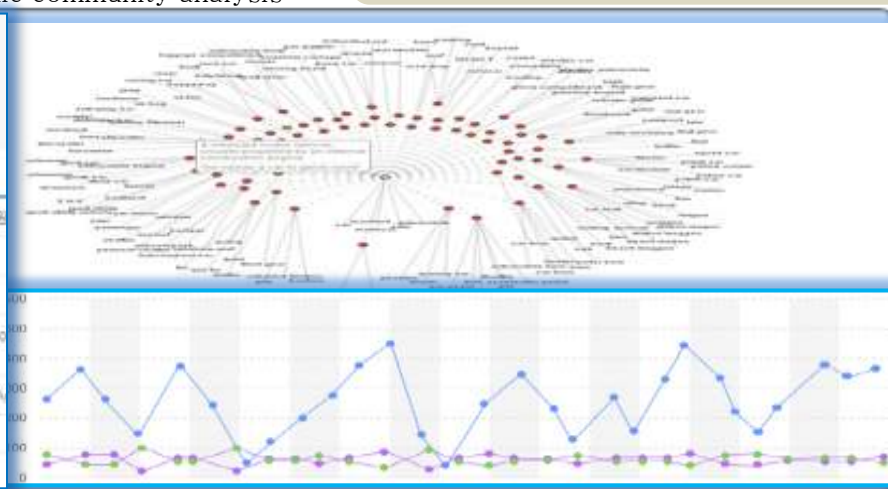
- Identification & Authority Control
  - Authors and its Affiliations, Organizations, Publishers, Journals
  - Keywords, Classifications
- Linkage & Open
  - Linkage between Journal Articles, Patents and Reports through IDs
  - Convergence of Contents and Identification
  - Linked Open Data



academic community analysis



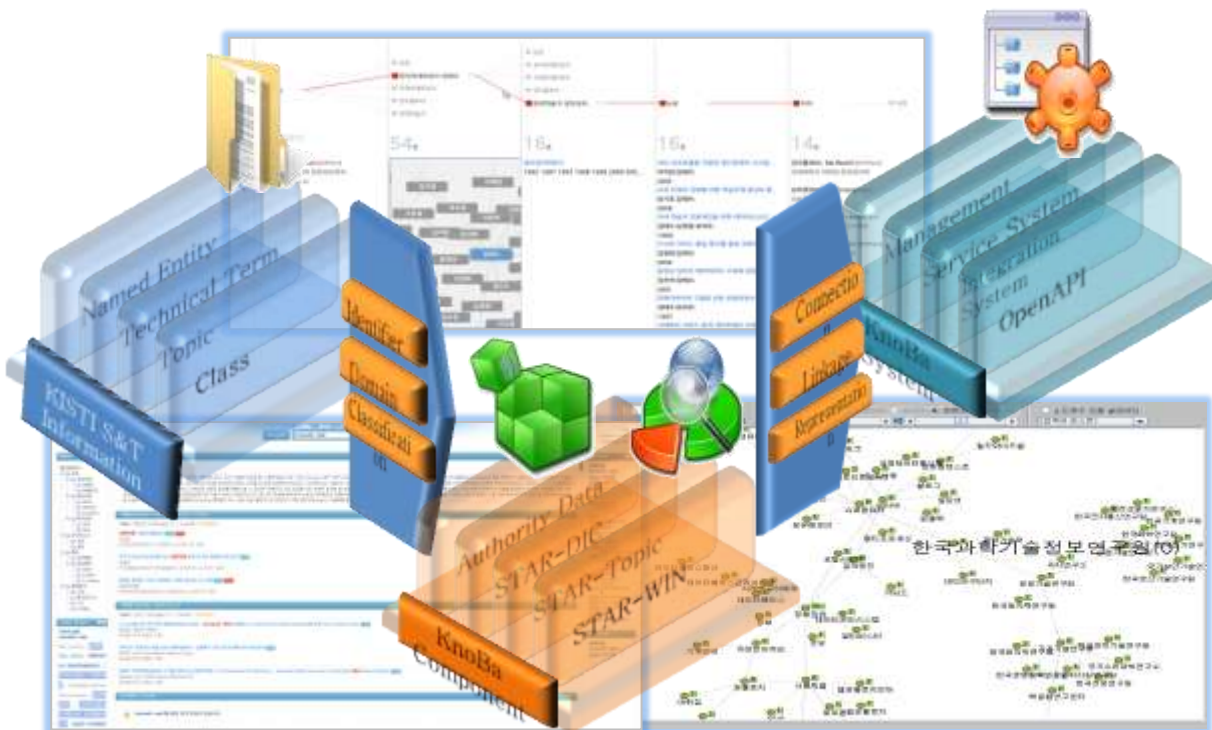
concentration of works by author



change of research product by organization

## S&T KnowledgeBase : Identification and Linkage Data Set

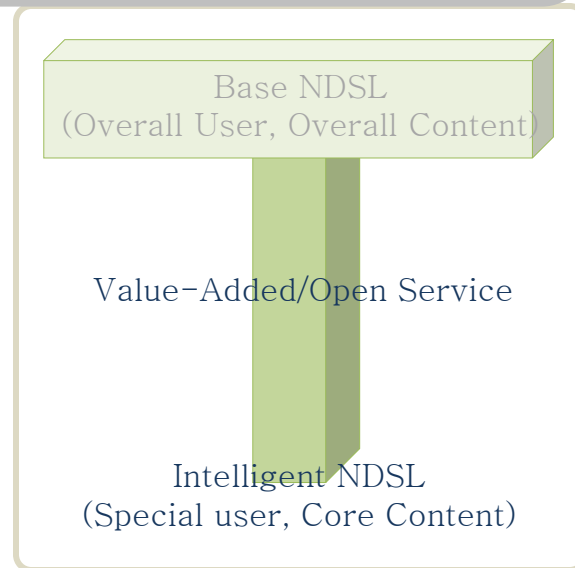
Information Representation Set that S&T Documents, Authority data, Classification, intelligent word network and R&D terms are semantically linked for on-demand Service



- S&T Document for KnoBa
  - 1,200,000 Domestic Journal Papers
  - 150,000 International papers
- Authority Data (Identification)
  - 500,000 Persons (mainly Korean)
  - 100,000 Affiliations & Publishers
  - 30,000 Journal Titles
- Topic Network
  - 1,600,000 Entries
  - 7,000,000 Relations
- Classification
  - DDC, KDC, LC, IPC, etc..

## High Value-Added Content : Convergence & Analysis

- Convergence of Content and Technology
  - S&T Intelligent Content and Knowledge Analysis Technology
  - Content : Identification Data, Linkage Content, Citation, etc.
  - Technology : Infometrics, Big Data Analysis Technology, etc.
- Information Analytics
  - Statistics & Usage Analysis, Time Series Analysis, Trend Analysis
  - Detection of R&D Trends
  - Visualization and Infographics of Analysis Information



Visualization and Infographics of High Value-Added Content

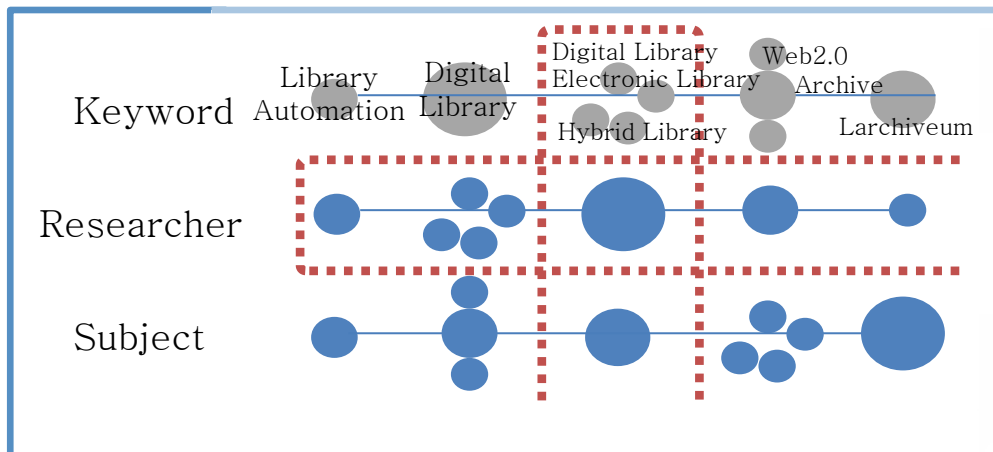


## Base NDSL

- Base Platform for Overall S&T Base Content
  - Search and Document Delivery Service for S&T Base Content
  - Collection and Sharing of S&T content with Collaborative Partnership

## Intelligent NDSL

- Intelligent Platform for Promoting the S&T Knowledge
  - Responsible Service for Creative Value for Special Customer
  - Specialized Service for Overall Research Product of Korean Researcher
  - User participation Open Platform for Ideas, Data and Applications



Analyze the Research Trends  
Grasp the R&D Opportunities

## Service Scenario by Customer Group

### Policy Decision Maker

- Support Strategic Decision-making
- Recommend Important Researchers and Engineers
- Verification of Funded Research Project and Derivation of R&D policy

### Researcher Scientist

- Provide Related S&T Information that helps to R&D by Specific Field
- Detect New Challenges Research Area and Support the Task Planning of R&D Research

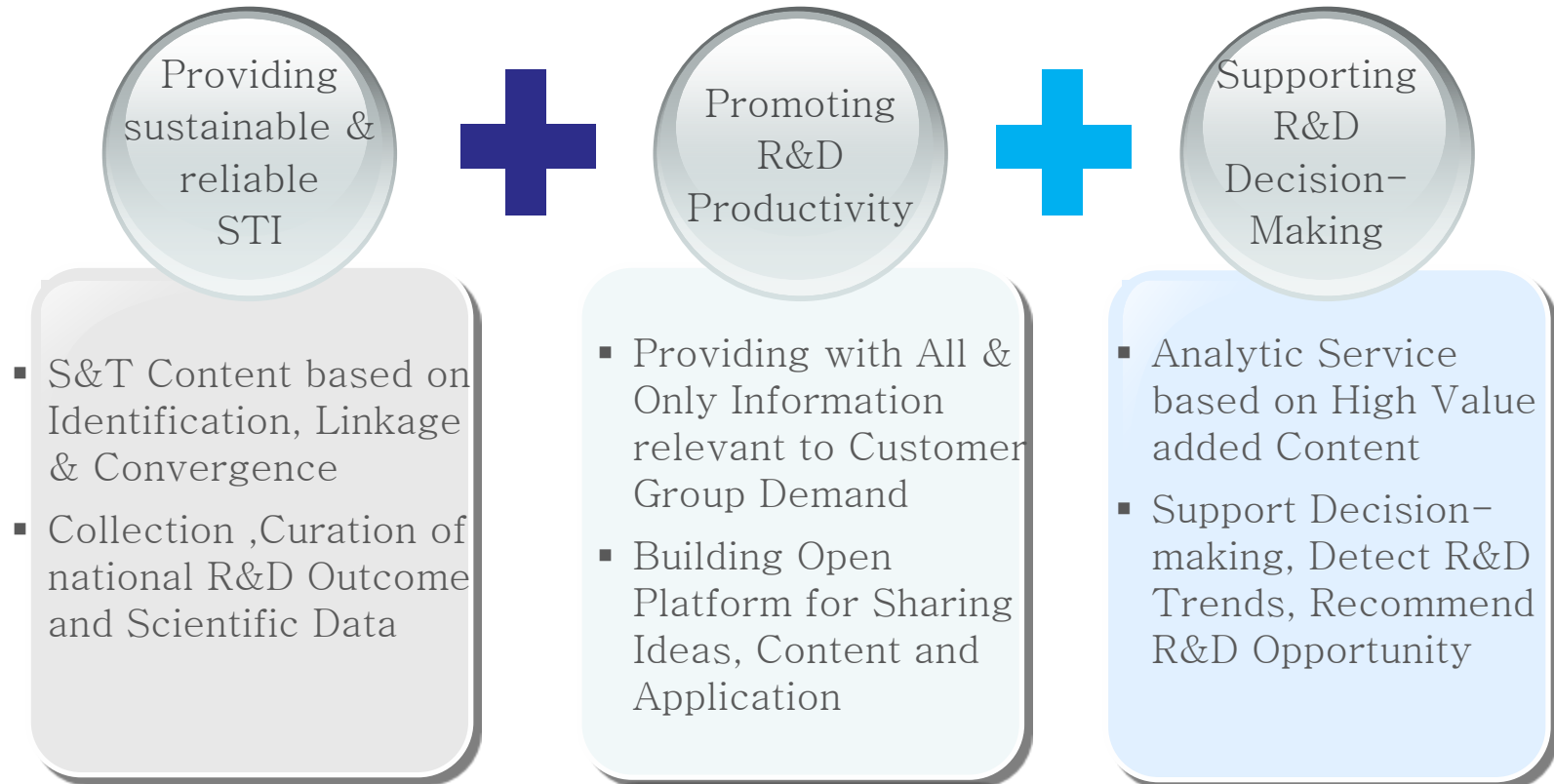
### Institute Libraries Business

- Support Technical Preemption via Future Technology
- Recommend the Special Researchers that have Proprietary Technology
- Promote User participation Platform for Sharing Ideas and Content

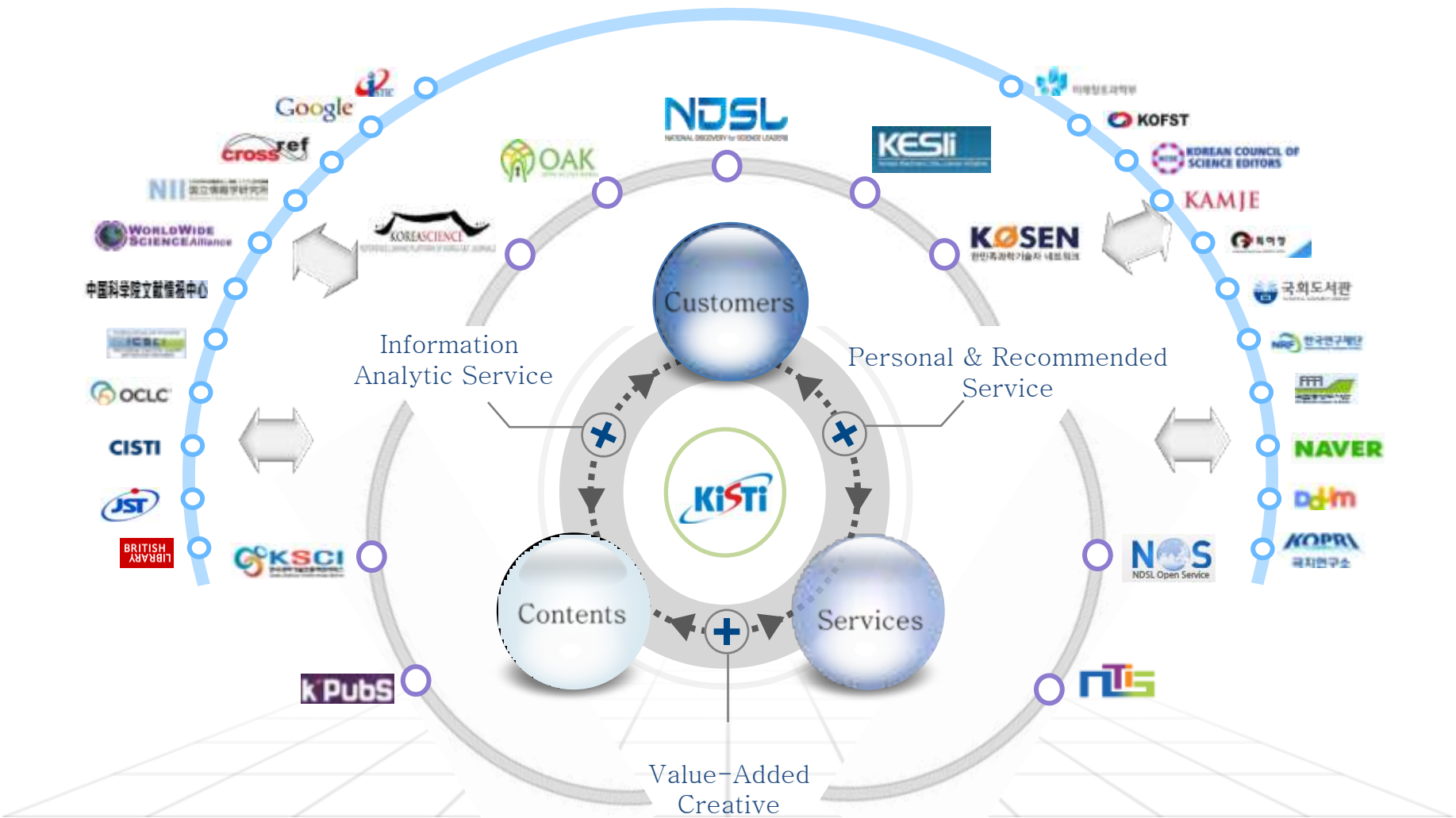
### Students

- Support Educational Information like History of Research
- Provide Personalized Service that can Create and Manage the Works by Authors and Organizations





KISTI Service 3.0



Policy & Plan, Knowledge Infrastructure, Persistent Support  
National Knowledge Circulation System



We will grow  
with close cooperation  
with you!

Heeyoon Choi  
hychoi@kisti.re.kr