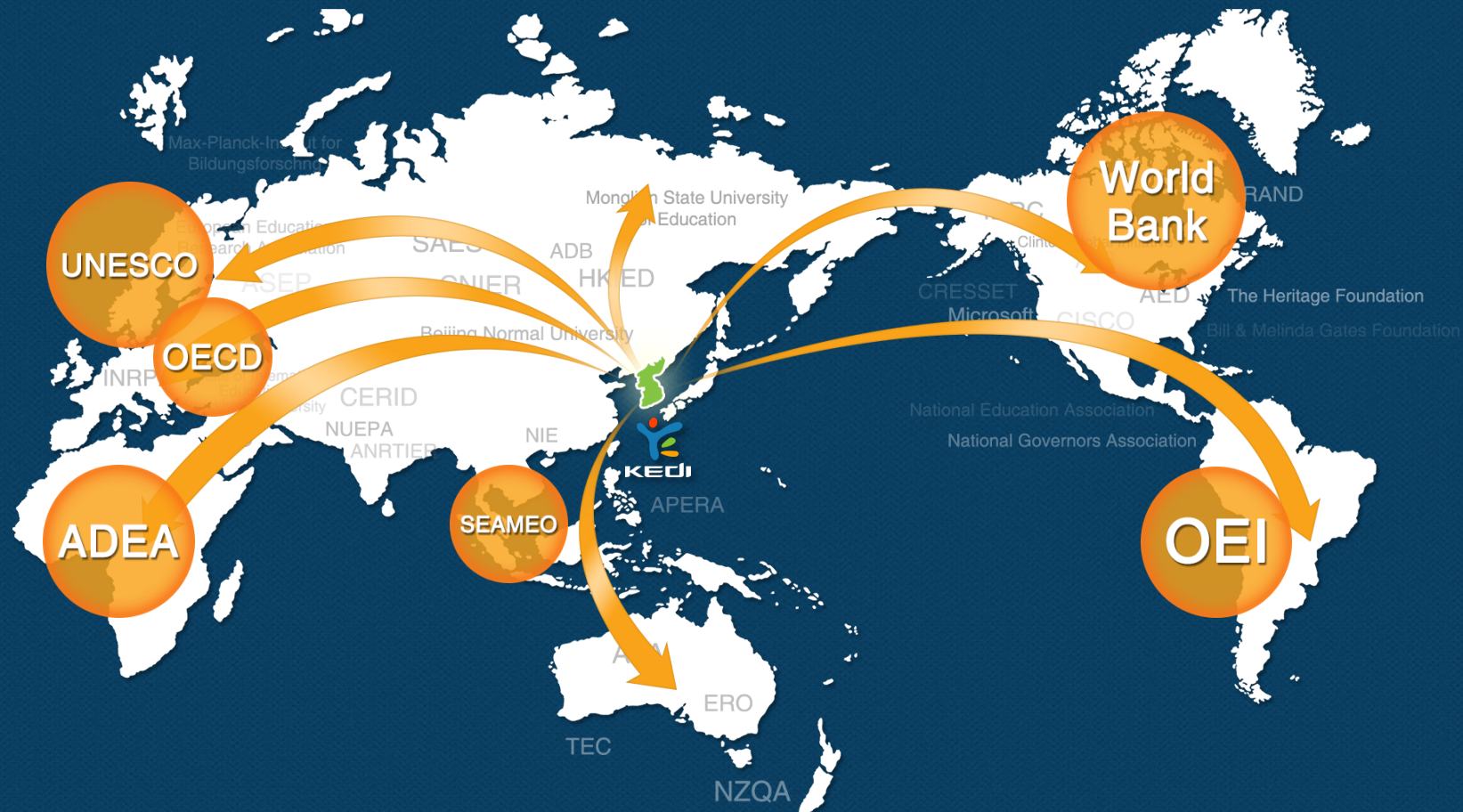


University Statistics Survey and Utilization of Big Data

The Interfaced university DB with survey and service





CONTENTS

01 Introduction

02 Establishment University Statistics Survey System with University DB

03 Implication

Introduction

01



I. Introduction of University Statistics Survey

1) History

Year	History	Note
2007	# Dispersion of educational statistic survey items under “The Ministry of Education”	• Several items were transferred to specialized institutes
2008	# Implemented the Public Disclosure of College Information, and increased the importance of university statistic data as a raw data	-
2012~	# Started enhancement of statistical system construction using raw data of higher educational institutes	• Establishment and improvement of the system from 2012 to present (2015) • Test operation for Big data construction by uploading DB at university directly (1H, 2015)
2015. 10	# Enhancement of university statistics survey is now in progress	-

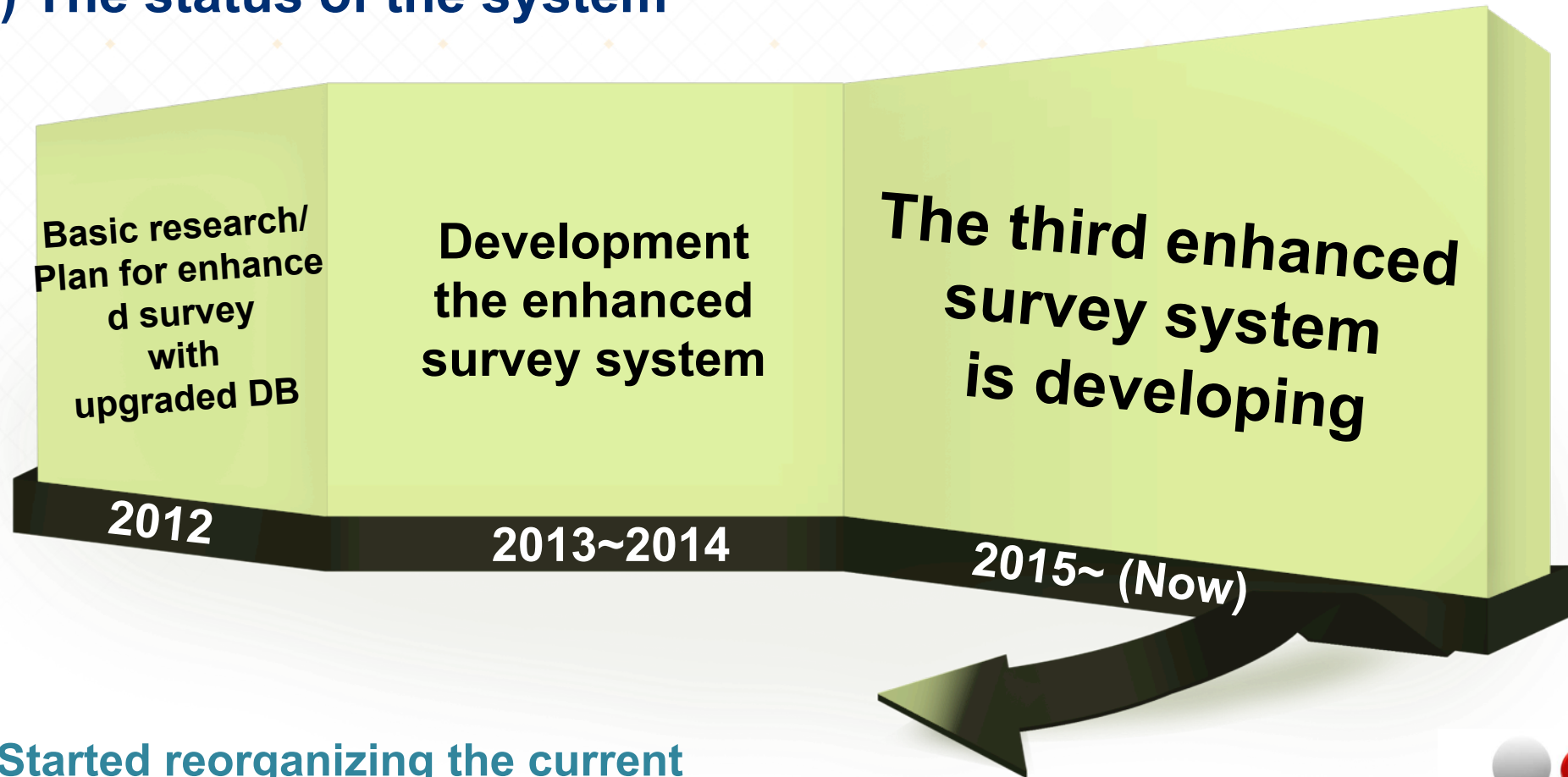
I. Introduction of University Statistics Survey

2) The status of the survey

Purpose	<ul style="list-style-type: none">• To support policy and research through making the university statistics• To provide nationwide statistical information services
Subject	<ul style="list-style-type: none">• About 1,800 of all higher educational institutes including junior college, university and graduate school
Time point	<ul style="list-style-type: none">• Twice a year (April 1st, October 1st)
Method	<ul style="list-style-type: none">• Upload through standardized database system of higher educational institutes
Outcome	<ul style="list-style-type: none">• Big data of university statistics and publications such as "Statistical Yearbook of Education"
Utilization	<ul style="list-style-type: none">• Government (The Ministry of Education) policy support data• Support data of government project such as "Public Disclosure of College Information"• Basic data of educational research & Nationwide web service

I. Introduction of University Statistics Survey

3) The status of the system



- ★ Started reorganizing the current higher education statistics since 2012 and have kept improving the third survey system



I. Introduction of University Statistics Survey

3) The status of the system

- Summary of the service system construction

- Budget : 3.5 millions (US dollars)
- Construction Period :
 - ✓ 2012 ~ 2014(1st and 2nd were completed developing)
 - ✓ 2015 (The third development is in progress)
 - ✓ Expansion of DB contents: Curriculum etc.

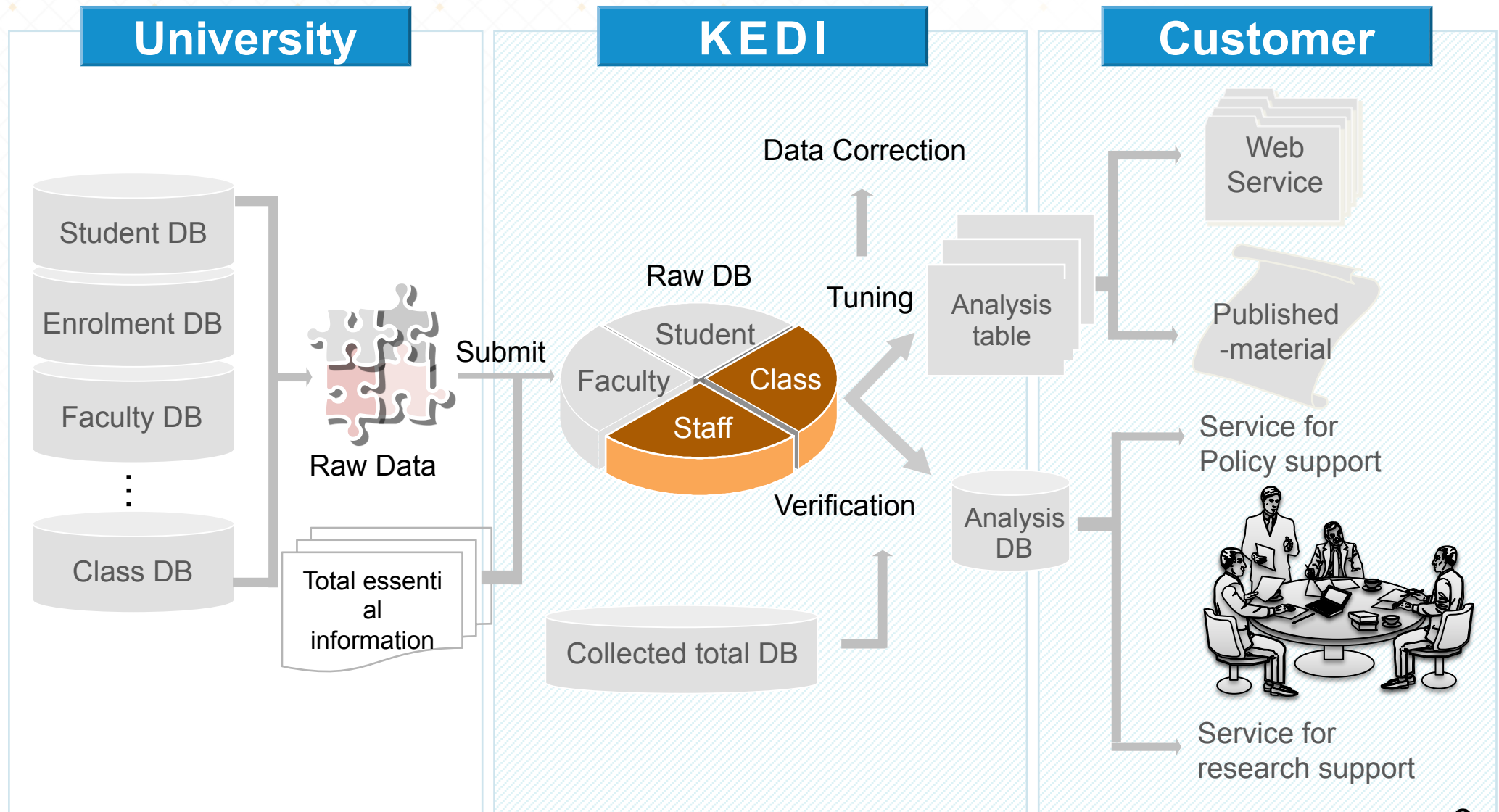
- Contents

- Individual DB about overall educational statistical survey
 - ✓ Departments, students, faculties, curriculums etc.



I. Introduction of University Statistics Survey

4) Current status of Big Data construction



I. Introduction of University Statistics Survey

4) Current status of Big Data construction



Announcement!

- Previous DB is converted to standardized DB by migration and it maintains a time series with new individual DB
- Maintain the newly collected individual DB by converting to a virtual DB which is a form of Data Mart.

Establishment of University Statistics Survey System with University DB

02

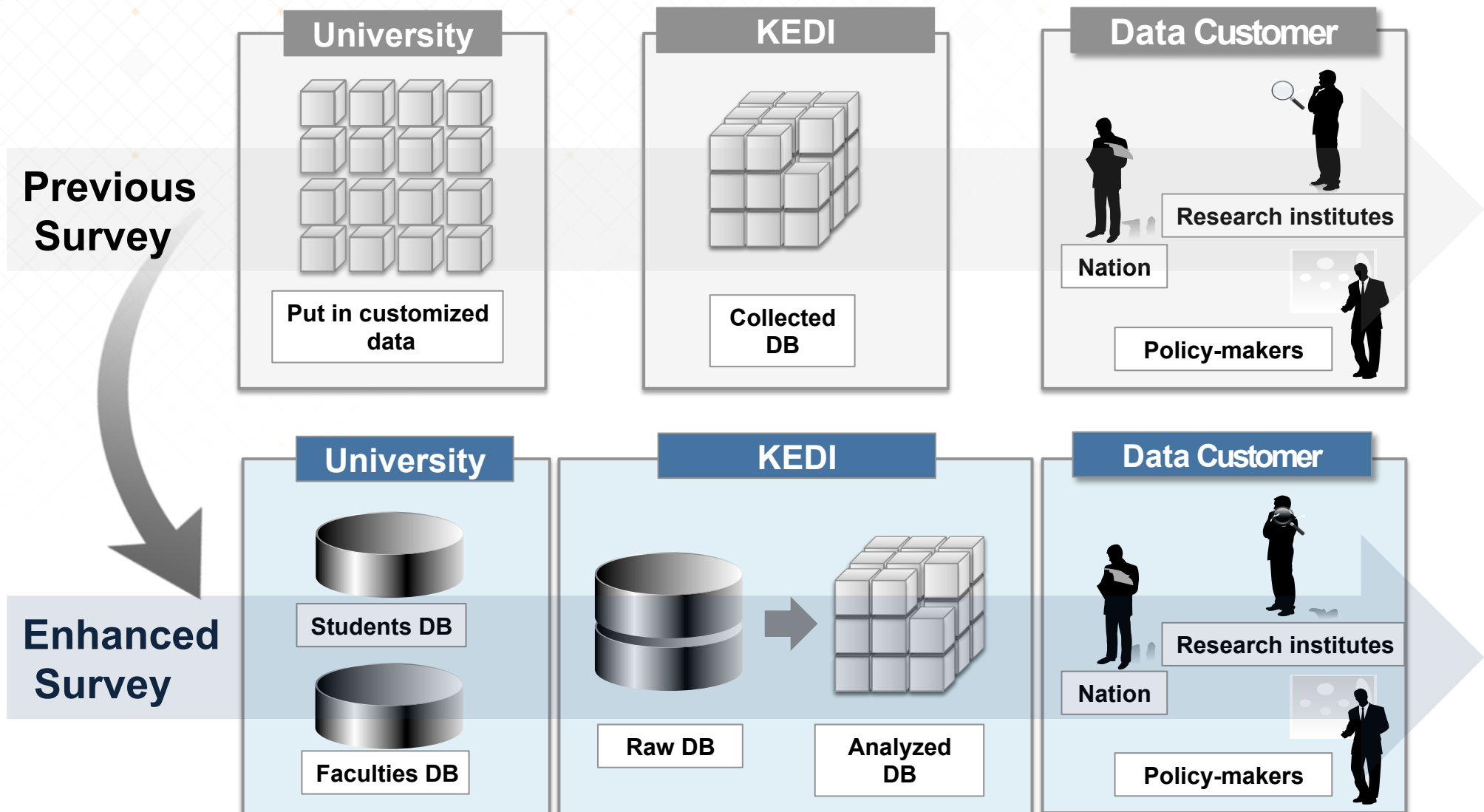


II. Establishment of University Statistics Survey System Using University Database

1) University Statistics Survey Using Big Data

- Collect all data related to student, faculty and class with standardized form and establish it as Big data**
- The survey system and diagram(Continued)**

II. Establishment of University Statistics Survey System Using University Database



II. Establishment of University Statistics Survey System Using University Database

1) University Statistics Survey Using Big Data

- Expected effect of Higher education statistics enhanced survey

- Shorten the term of survey (6months → 1.5months)
- Downsize the human resource for the survey (around 70% reduction)
- Increase the reliability on data by collecting a raw data
 - ✓ Resolve the consistency issues of submitted data
 - ✓ Having a raw data increases data reliability
 - ✓ Increase data reliability by cross-validation analysis with external DB



II. Establishment of University Statistics Survey System Using University Database

1) University Statistics Survey Using Big Data

- **Expected effect of Higher education statistics enhanced survey**
 - Maximization the data linkage, utilization and service
 - ✓ Data service focused on the limited tables
 - Provide a customized data(various index and dataset for statistical analysis)
 - ✓ Linkage Analysis and utilization with external DB

II. Establishment of University Statistics Survey System Using University Database

2) Improvement

- **Conversion of the input method from the table form into the raw data form**
 - Every year, over 30 percent of departments change their name or curriculum
 - Since the department is the basic unit of the survey, it is necessary to organize department.
- **Set a primary key for raw data**
 - Absence of commonly used primary key(resident registration number) causes the duplication of survey contents

II. Establishment of University Statistics Survey System Using University Database

2) Improvement

- **Need to decrease the risk of having any personal information**
 - Organize personal information, protection and regulation
 - Systematic improvement: data encryption, firewall, etc.



Implication 03



III. Implication



1) The reliability is the most important



2) Necessary to ease survey burden



3) Use records(like file or DB, etc.) in each university as much as possible



**4) Need a considerable time and finance for establishing Big data
→ required a step-by-step approach in the medium and long term**

III. Implication

5) Various service plan consideration with Big data

- Figuring out the demand for users should be the first
- Progressing with not only one service plan,
also various service plans depend on the situation or condition.

6) Professional institutes for leading the statistical survey, analysis and service

- Develop various survey items, guidelines and standards according to
a changing circumstance
- Need a professional organization that supports to submit university DB
- Need to train professional human resource for analyzing Big data

Thank you



Korean Educational Development Institute, Baumoe 1rd. 35,
Umyeon-dong, Seocho-gu, Seoul 06762



+82-02-3460-0384



kediman@kedi.re.kr



<http://hi.kedi.re.kr>