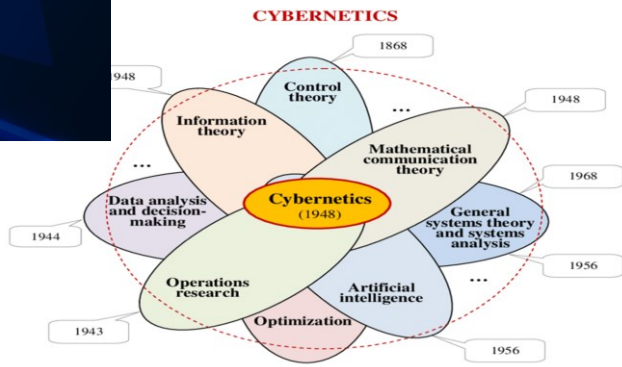
Telkom University

ESD enterprise system development

ROAD MAP & RESEARCH DIRECTORY

OF RESEARCH GROUP OF ENTERPRISE SYSTEM DEVELOPMENT
INFORMATION SYSTEM DEPARTMENT
SCHOOL OF INDUSTRIAL AND SYSTEM ENGINEERING

HARMONY EXCELLENCE VALUE INTEGRITY



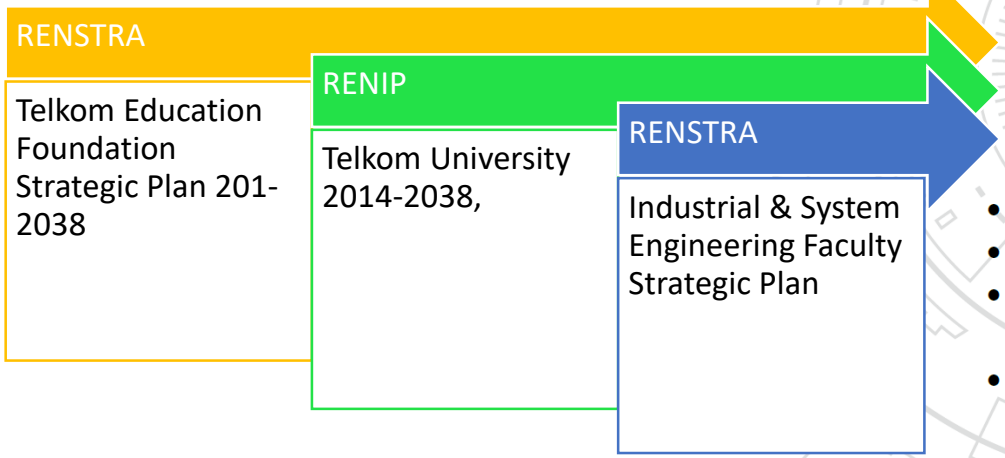
Presented by

Deden Witarsyah Jacob

20 Mei 2020

Vission and Mission

of the Research Group of Enterprise System Development



Vission

Playing an active role in the development of productive and globally superior Information System in Teaching, Research, and Dedication towards ICT Industry 4.0

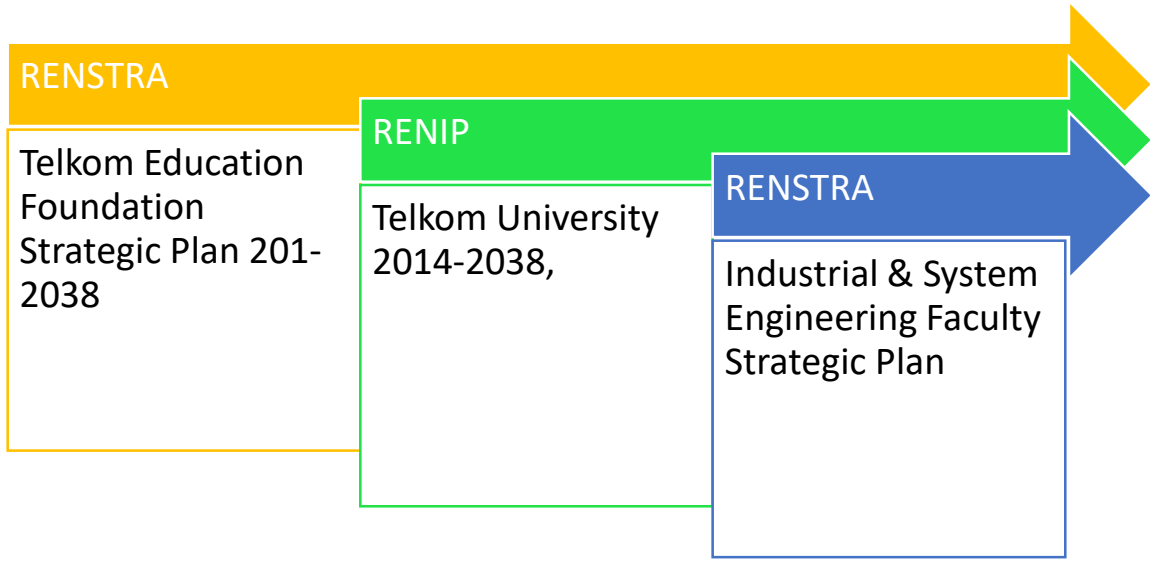
Mission

- Supporting curriculum development in the field of Enterprise Information System
- Producing the publications of nationally and internationally indexed research results
- Building the lecturers' competencies that are in line with the national standards to support the development of the study program
- Carrying out the community services based on the utilization of research results in the field of information system

Purposes

- Generating research in the field of Enterprise/Government system towards ICT for Industry 4.0
- Performing community services to the Enterprise and Government industrial community
- Carrying out the teaching activities and curriculum development in accordance with professionalism

The roadmap for conducting intensive research in three fields is reflected in the 2019-2023 strategic plan, and the first step in the map is defined as:



Stage A. Development (2019-2020) which is divided into

1. Research : The development of Research quality of lecturer based on expertise in national and international scales.

2. Community Services : Increasing the number of community services that are beneficial for the government, industry, and NGO based on the problems encountered.

Stage B. Synthetizing (2021-2022) which is divided into

1. Research: Increasing the number of International Grant, and
2. Community Service: Innovations produced by research groups in creating a startup in accordance with the needs of the community and the economy in the form of services and products.

Stage C. Utilization (2023) which is divided into

1. Research: Development of Research Quality, Research Centers, Start Up and The development of spin-off companies. And
2. Community Services: Increasing the International Collaboration.

ROAD MAP OF RESEARCH AND COMMUNITY SERVICES OF RESEARCH GROUP OF ESD

A. Goals of Research and Community Services of Research Group of ESD

Every research and Community Service carried out in the Research Group of ESD should be directed to the achievement of targets set by the faculty, both quantitatively and qualitatively, namely:

1. Quantitatively (the number), i.e. the number of research results and the realization of Community Sevices program are carried out; henceforth,the ratio is calculated to the number of permanent lecturers. Cumulatively, the research realization of target achievement is twice the number of permanent lecturers, or every permanent lecturer has an obligation to carry out researches at least twice in one academic year, while the achievement target of realization of Community Sevices is as many as the number of permanent lecturers, or every lecturer has an obligation to carry out the Community Services at least twice in one academic year.
2. Quantitatively, research results are seen from the reseach quality of lecturers and/ or students by measuring them through research outcome for the improvement of life values and welfare of the community. The higher the value of benefits and the wider the community can take the advantage of the reseach results and Community Services, the better the quality of research and Community Services which are conducted.

B. Research Strategy and Community Services of Research Group of ESD

The strategies of research and Community Services of the Research Group of ESD are in line with the strategies of Study Program of Information System and School of Industrial and System Engineering which are held on 6 platforms, namely:

a. Curriculum,
b. Possessed Potential Resources,
c. Funding Sources,
d. Study of Scientific Fields,
e. Strategic Values, and
f. Internationalization

The Road Map (Strategic Plan) of the 2019-2023 Reseaches can be seen in the figure 1 below.

STRATEGIC PLAN 2019-2023

Development (2019-2020)

Research : The development of Research quality of lecturers based on expertise in national and international scales.

Community Services : Increasing the number of community services that are beneficial for the government, industry, and NGO based on the encountered problems.

Synthetizing (2021-2022)

Research: Increasing the number of International Grant.

Community Services: Innovations produced by research groups in creating a startup in accordance with the needs of the community and the economy in the form of services and products.

Utilization (2023)

Research : Development of Research Quality, Research Centers, Start Up and The development of spin-off companies.

Community Services : Increasing the International Colaboration.

Based on the Platform :

Curriculum, Human Resource, Funding, Knowledge, Value and Internationalization

ESD enterprise system development

- *Figure 1. Road Map of the 2019-2023 Reseach and Community Services*

Research Tree

The existence of research tree is important since it gives the overview of existing and ongoing research, priorities of research, and the future research. It also gives the information on the physical infrastructure, intellectual infrastructure, research coordination, and management. It is hoped that rough such information it can facilitate the future research, expertise and capacity to be made. The research tree can also give direction and guidelines for the future research which will improve the quality of research. There is a research tree from three core-competences in the Research Group of ESD which givesthe overviews of cluster research from each of core competence. The core research put forward is designed to be unique, smart, have competitive edge, applicable and implemented. The research activities of each core competence can mobilize academic staffs who are doing research and support and promote research fields in the Study Program of Information System. Figure 2 portrays the 3 core components (Professionalism), they are:

1. Information System Development
2. Enterprise Data Management
3. Technopreneurship.

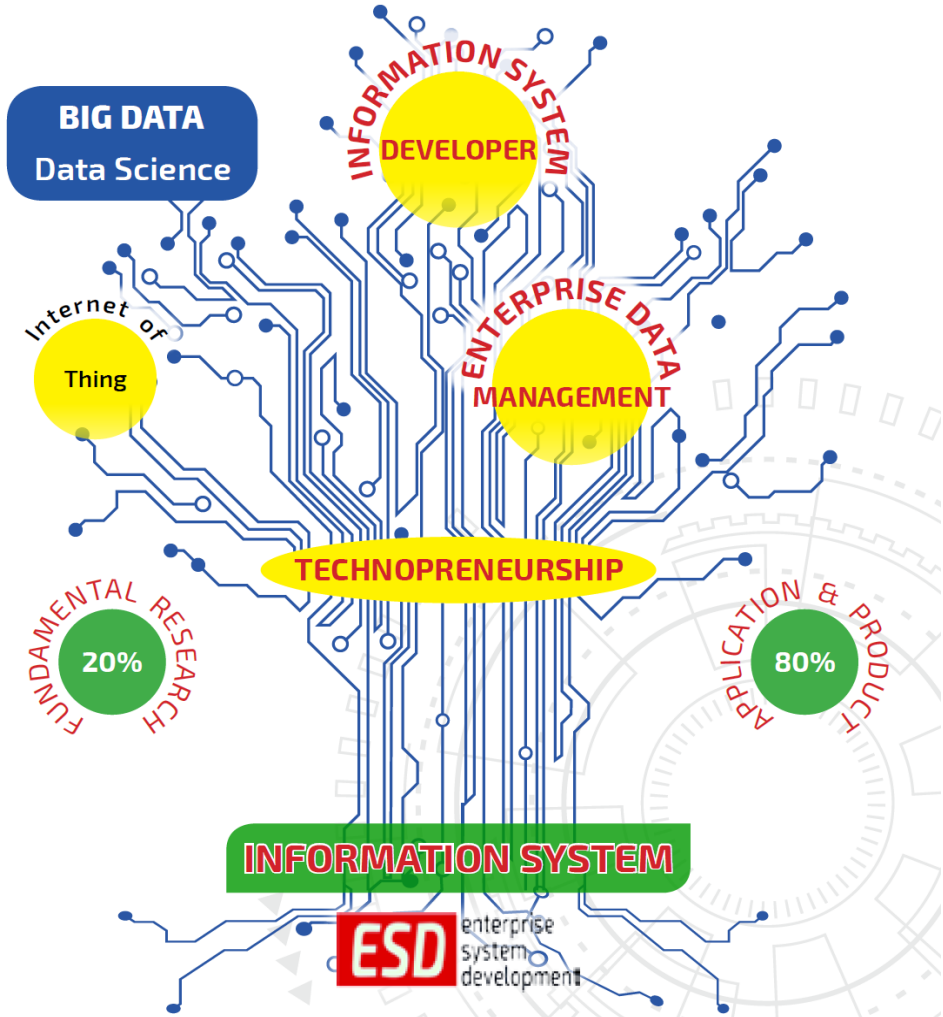


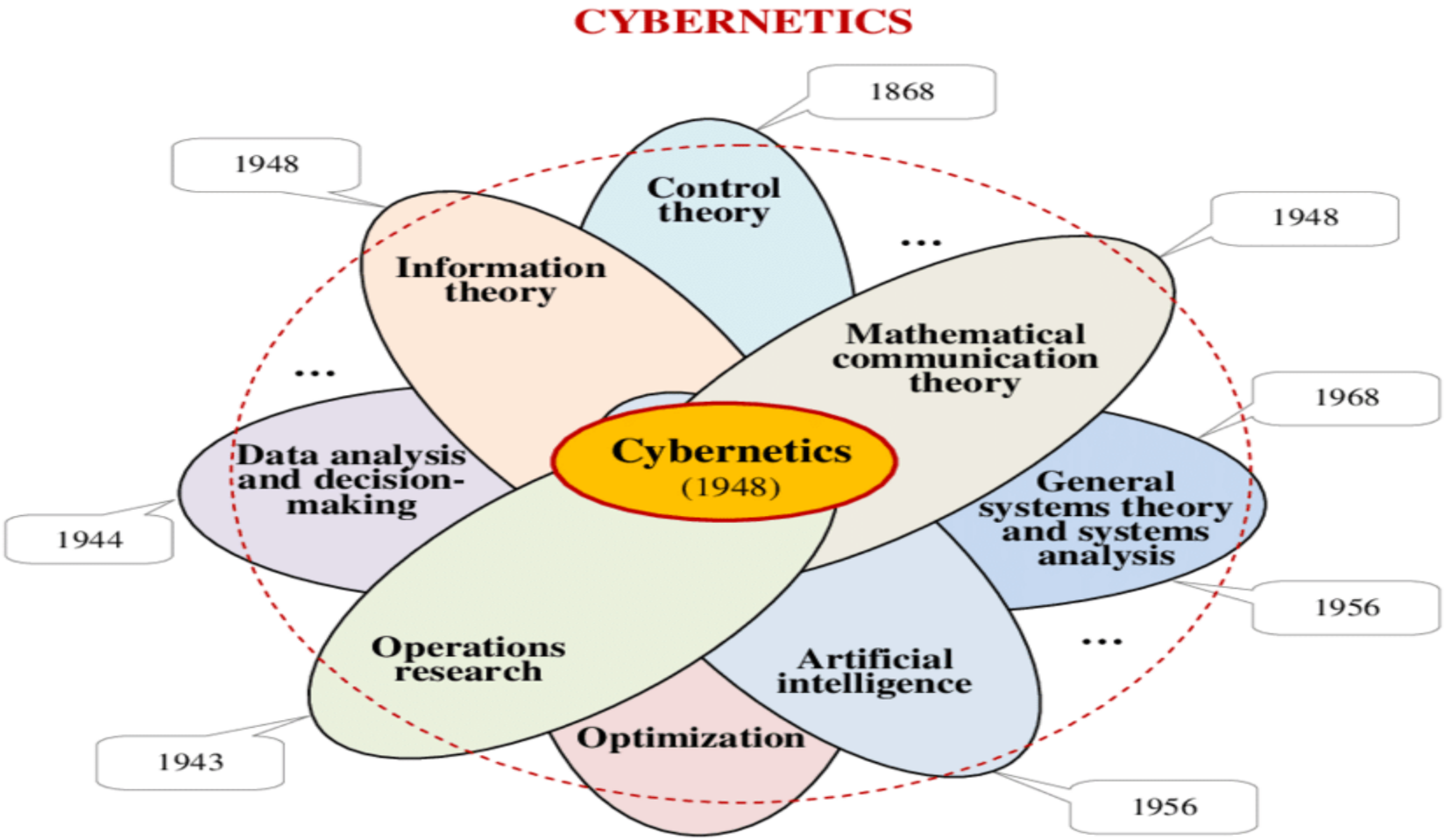
Figure 3. Research Tree of the Research Group of ESD

STRATEGIC PLAN

THE grand strategy of Research Group of ESD, which is stated that the2019-2023 Strategic Plan of Expertise Group is to strengthen the noble research and community services to increase the Research Group level of ESD in international standard. This can be achieved by:

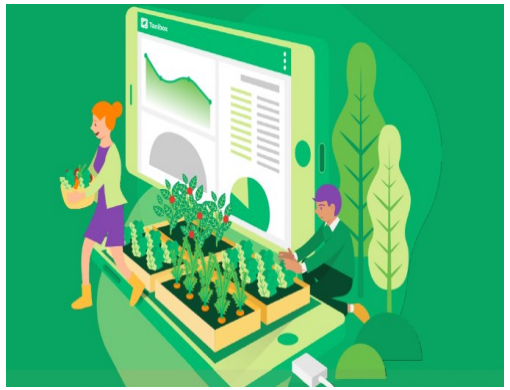
- Human resource database based on professionalism
- Creating comfortable environment for doing research and community services programs
- Giving directional research and community services program
- Giving support to develop cluster and leading research
- Providing well infrastructure and research facilities
- Collaborating with industries, small medium enterprise and Community
- Commercialization of research outputs
- Increasing international joint conference
- Increasing International joint community services
- Increasing publications in international journals
- Increasing patents
- Increasing the awareness of intellectual property rights

TRANSFORMATION



Lab. Enterprise Data Engineering

Lab. Enterprise Intelligent System



Lab. Enterprise System Development

Total Member :
Ph.D : 6
Phd Cand. : 5
Master : 15

Dr. Oktaria Nurul

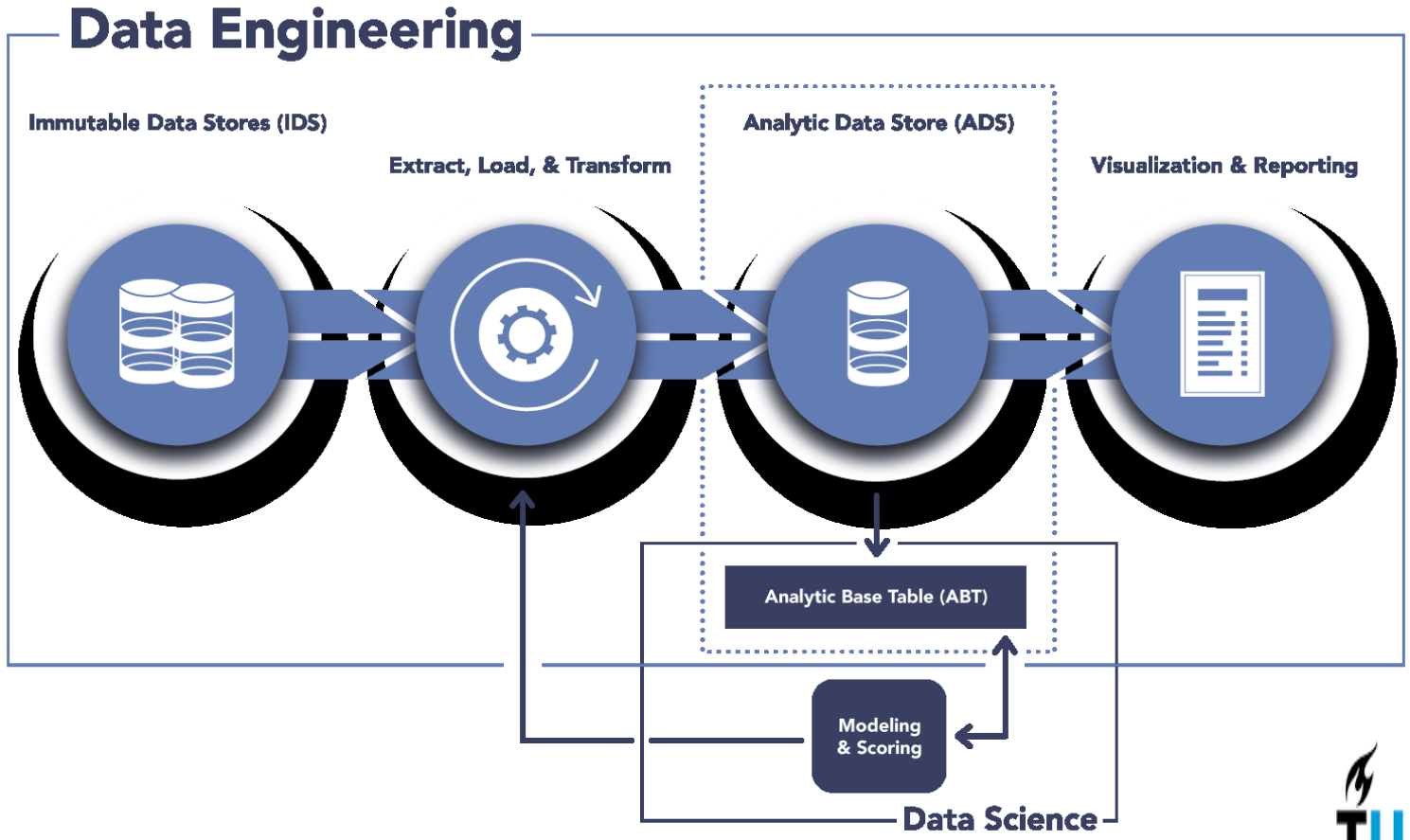
Dr. Tatang Mulyana

Alvi Syahrina M.Sc.

ENTERPRISE DATA ENGINEERING *LAB*

Data Engineering is the discipline of designing, building, and maintaining a robust infrastructure for collecting, transforming, storing, and serving data for the purposes of machine learning, analytic reporting, and/or decision management. Data Engineering is the enabler for efficient and operationalized Data Science.

EDE lab focuses research on DATA ENGINEERING FOR ENTERPRISE SOLUTION



Fakultas Rekayasa Industri
Telkom University

KK Cybernetics

ENTERPRISE DATA ENGINEERING

(EDE) lab focuses research :

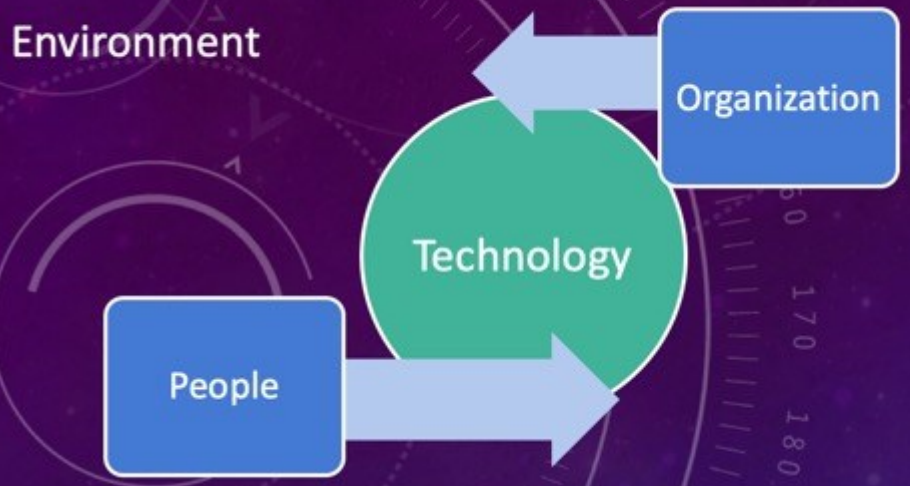
- Data mining
- Process mining
- Data modeling techniques
- Relational and non-relational database theory and practice
- Database clustering tools and techniques
- ETL design
- Architectural projections

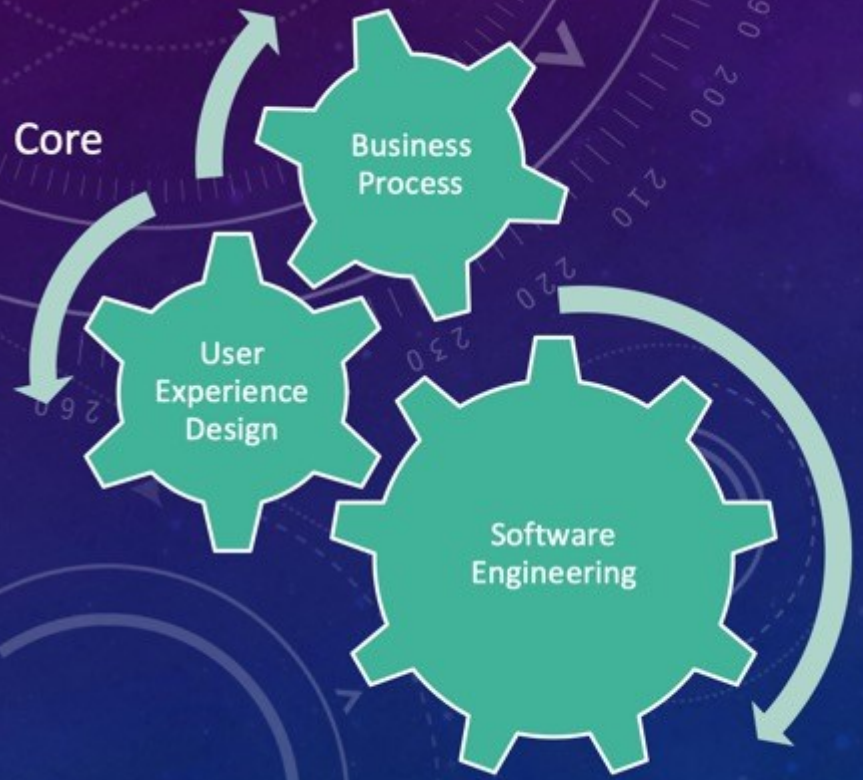
TU Delft · UPM Universiti Putra Malaysia Berilmu Berbakti · Deakin University Australia · 서울대학교 Seoul National University · Universiti Teknologi MARA

ENTERPRISE SYSTEM DEVELOPMENT

RESEARCH GROUP – FAKULTAS REKAYASA INDUSTRI - 2020

ESD is a research laboratory is a melting pot for researchers in the scientific fields of application of software methods and technologies that focus on human behavior at the issues of organization and information systems.





Method and Tools

- Collaborative Methodology
- Human-centered Design
- Software Development Methodology

Application

- Technopreneurship
- Human-Computer Interaction
- Digital Marketing & E-Commerce
- Enterprise Systems

ENTERPRISE INTELLIGENT SYSTEM
LABS

The recent trend has been using hybrid approach rather than using a single intelligent technique to solve the problems. The EIS lab focuses on research related a framework to develop enterprise solutions that are empowered by intelligent techniques. It emphasize not only the usage of intelligent techniques but also the environment that includes various interfaces and components to develop the intelligent solutions. It leverages the cybernetics concept, which is the science concerned with the study of systems that are capable of receiving, storing and processing information for control.

Product	Enterprise Intelligent System
Technology and Applications	Industrial Internet of Things Industrial Robotics Artificial Intelligence
Design	Agent Oriented System Engineering
Methodology	Industrial Informatics Cybernetics

ORACLE ACADEMY

NATIONAL INSTRUMENTS

COLLABORATION RESEARCH GROUP

Center of Disaster Resilience and Sustainable Development

Telkom University Collaboration:
School of Industrial and System Engineering
School of Computing
School of Economy and Business
School of Applied Science

Partnership with:
Institut Teknologi Bandung
Universiti Teknologi Brunei
Coventry University

Telkom University

SUSTAINABLE DEVELOPMENT GOALS

Strategic Goal	Disaster Risk Science and Engineering	Trending Technologies for Natural Disater Risk Reduction	Disaster Data Science and Management:
Developing and applying risk-aware infrastructure monitoring system	Risk and vulnerability assessment, multi-hazard modelling, numerical modelling and simulations, resilient public infrastructure, resilient built environment.		
Developing and applying trending technologies for dissaster resilience		Climate change, Remote Sensing, GIS, Drone, UAV, ICT and AI applications in multi-hazards scenario, weather forecast and early warning.	
Developing and applying management information system for dissaster resilience and sustainable development			Big Data, Cloud sourcing of disintegrated data, disaster data management, risk communication, decision support system.

Recent Research

Bridge Structural Health Monitoring System

Bridge Damage Detection and Localization

Forthcoming Research

Disaster Sensitive Plan and Decision Support System

Drone-enabled Autonomous Bridge Inspection

Pemanfaatan Scrum utk Pengelolaan KK

INTERNATIONAL COLABORATION

Lab. Enterprise Data Engineering

Lab. Enterprise Intelligent System

Lab. Enterprise System Development

NII Inter-University Research Institute Corporation / Research Organization of Information and Systems National Institute of Informatics

TU Delft

THE UNIVERSITY of EDINBURGH

서울대학교 SEOUL NATIONAL UNIVERSITY

UNIVERSITY OF CAMBRIDGE

Coventry University

UPM Universiti Putra Malaysia Berilmu Berbakti

HRW HOCHSCHULE RUHR WEST UNIVERSITY OF APPLIED SCIENCES

Curtin University

UTHM Universiti Tun Hussein Onn Malaysia

DEAKIN UNIVERSITY AUSTRALIA

Universiti Teknologi MARA

Manage conference under KK

Manage conference under KK

Manage conference under KK

Workshop satu dan open data Indonesia
Nusa dua Bali , 7 Maret 2021

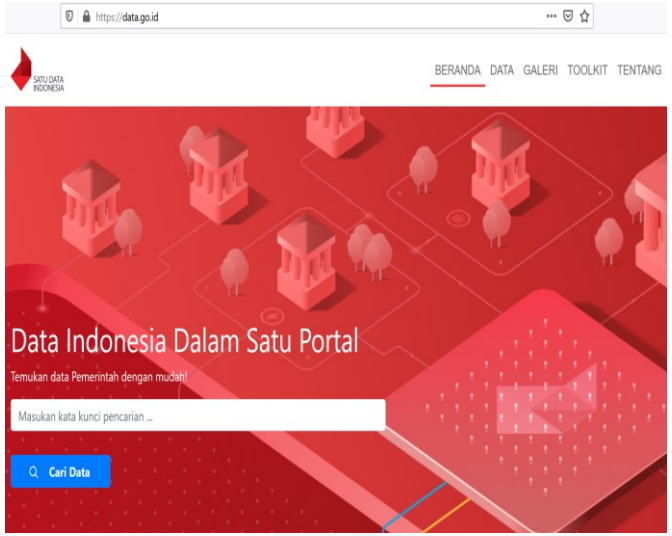
Direktorat Endowment dan Alumni

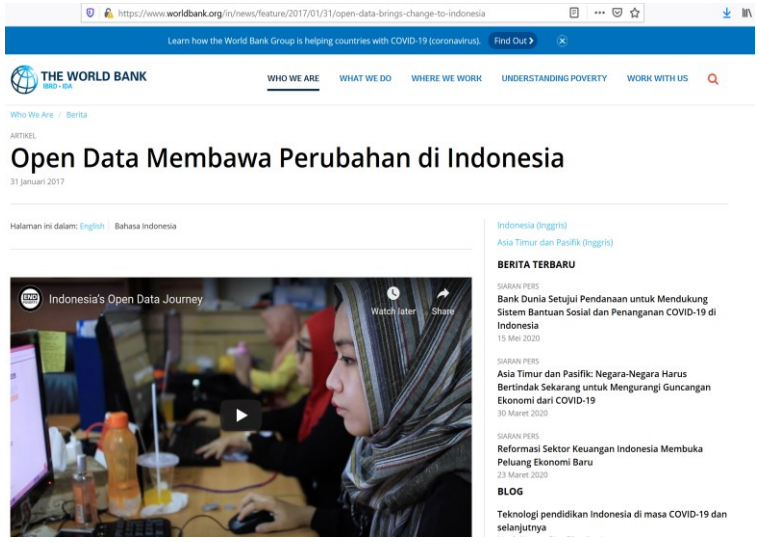
Fakultas Rekayasa Industri Telkom University

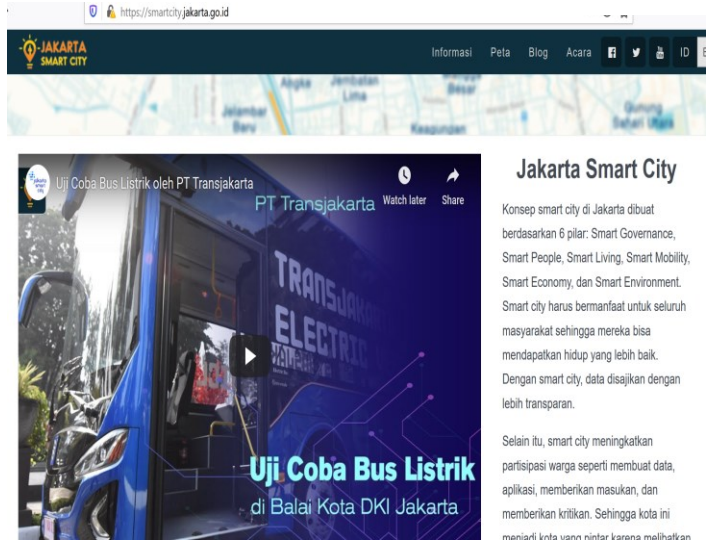
TELKOMSEL by Telkom Indonesia

ESD enterprise system development

TU Delft Delft University of Technology







Thanks for your attention
Any question