

ADVANCING  
HUMANITY



**ITS**  
Institut  
Teknologi  
Sepuluh Nopember



NATIONAL  
MULTIPLICATION  
TRAININGS

**Politeknik Caltex Riau**  
Empowers You To Global Competition



# Vocational Higher Education Transformation in Indonesia (VALERIA)

## SHARING PENGELOLAAN PERGURUAN TINGGI

Mochamad Ashari  
Rector of ITS (Institut Teknologi Sepuluh Nopember) (ITS)

Jakarta, 4 Desember 20

[its.ac.id/international](https://its.ac.id/international)

# Prof. Dr. Ir. Mochamad Ashari, M.Eng., IPU, Asean Eng.

## Position

- ❖ Current position: President (Rector) of Institut Teknologi Sepuluh Nopember (ITS), 2019 - 2024
- ❖ Head of SNPMB (Board of the Indonesia State University Entrance Selection), 2022-2023
- ❖ Vice Chair of Majelis Rektor PTN, 2020-2022
- ❖ Rector of Telkom University, Bandung, 2013-2018

## Education

- ❖ Bachelor of Electrical Engineering, 1989, ITS, Surabaya, Indonesia
- ❖ Master of Engineering (Electrical), 1997, Curtin University, Australia
- ❖ Doctor of Philosophy (Electrical), 2002, Curtin University, Australia
- ❖ Professor of ITS, in the field of power electronics and renewable energy applications since 2009

## Awards

- ❖ Achievement Awards 2023, by Australia Consul-General in Surabaya, 70-year Australia Scholarship Celebration
- ❖ Innovation Awards - Curtin University Alumni Achievement Awards, 2020
- ❖ The best University Leaders, Obsession Media Group, 2023 and 2020
- ❖ 500 best researchers of Indonesia, announced by the Ministry of Research and Technology, 2020

## Research Activity

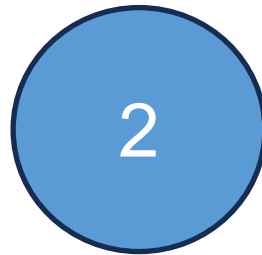
- ❖ Hindex Scopus = 21, Google Scholar = 24



Dinamika  
Vokasi 2 PT



Strategi  
Pengelolaan

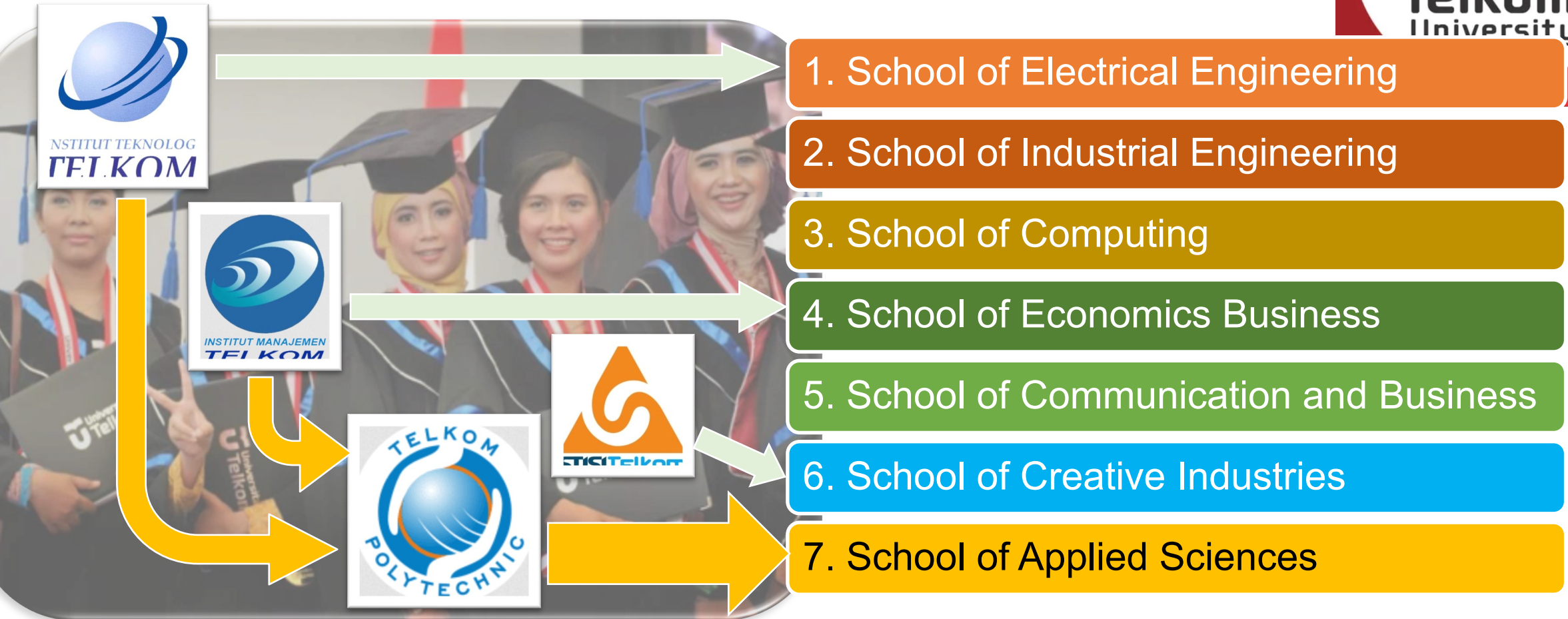


Sharing Pengelolaan  
di ITS



# SEJARAH VOKASI – TELKOM UNIV.

(2014) 4 to 7 FACULTIES : 6 D3, 18 S1, 2 S2



# SEJARAH VOKASI – TELKOM UNIVERSITY



Program Studi D3 Teknologi Telekomunikasi

Program Studi D3 Rekayasa Perangkat Lunak Aplikasi

Program Studi D3 Sistem Informasi Akuntansi

Program Studi D3 Sistem Informasi

Program Studi D3 Teknologi Komputer

Program Studi D3 Manajemen Pemasaran

Program Studi D3 Perhotelan

Program Studi D4 Teknologi Rekayasa Multimedia

# SEJARAH VOKASI - ITS



Pendidikan Ahli  
Teknik (PAT)

FT Perkapalan

D3

FT Sipil, FT Mesin, FT  
Elektro dll.



Poltek  
Perkapalan ITS

F. Non Gelar Tek.

FT Sipil, FT Mesin,  
FT Elektro dll



Poltek Elektronika ITS

Poltek Perkapalan ITS

FT. Sipil Perenc.

D3

FTI: T. Mesin, T.  
Elektro, dll

D3

ITS 2012 ~



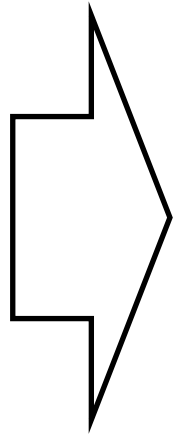
PPNS



PENS

Institut Teknologi Sepuluh Nopember

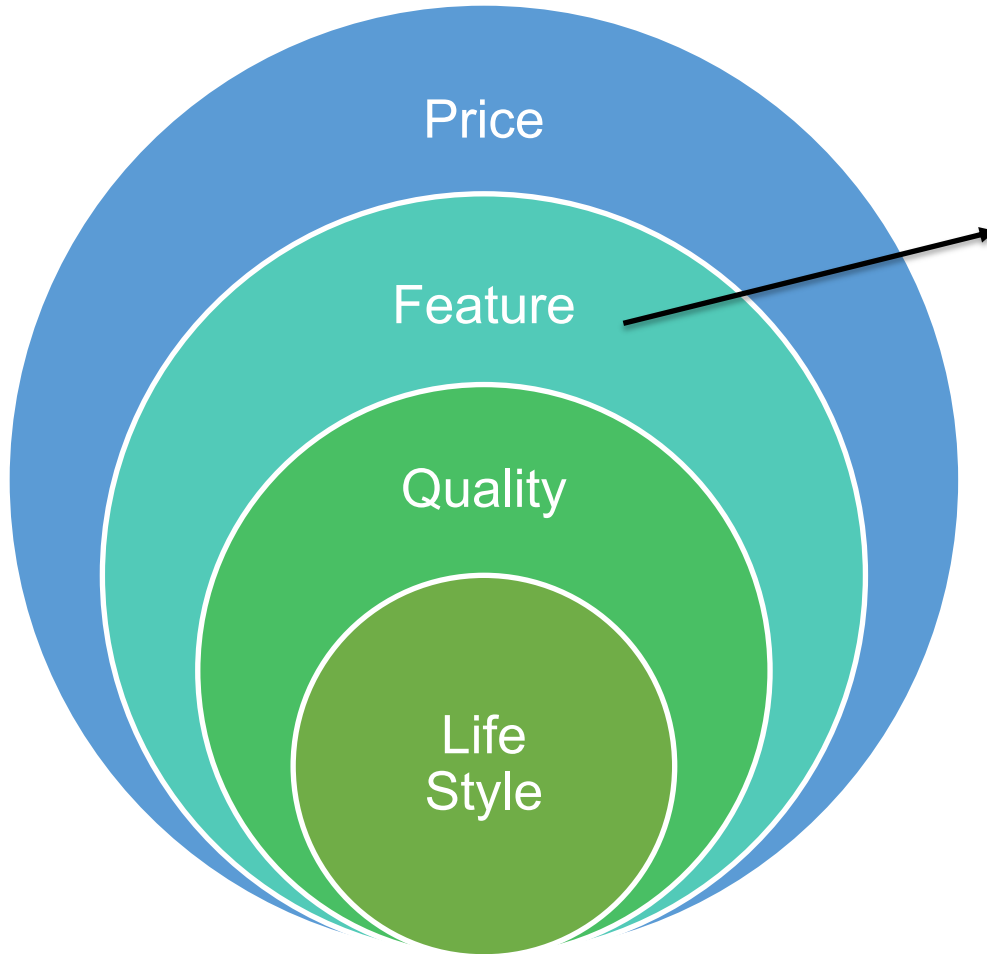
# APA TANTANGAN UTAMA MENGELOLA VOKASI?



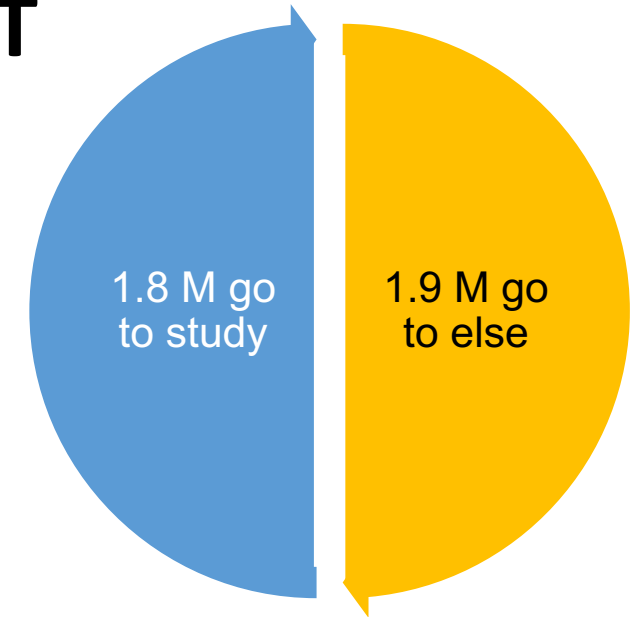
Higher Edu Inst.

- Daya tampung tidak terpenuhi
- Kualitas calon mhs kurang memadai
- Finansial
- ...

# KONDISI SOSIAL MASYARAKAT



- D3, D4, S1
- Program studi



Jumlah Siswa Kelas 12 per tahun

## Daya Tampung Awal PTN 2022 & 2023

|      | PRES-TASI | TEST    | MANDIRI | TOTAL   |
|------|-----------|---------|---------|---------|
| 2022 | 122,651   | 213,406 | 139,726 | 454,010 |
| 2023 | 152,098   | 232,723 | 172,534 | 557,355 |

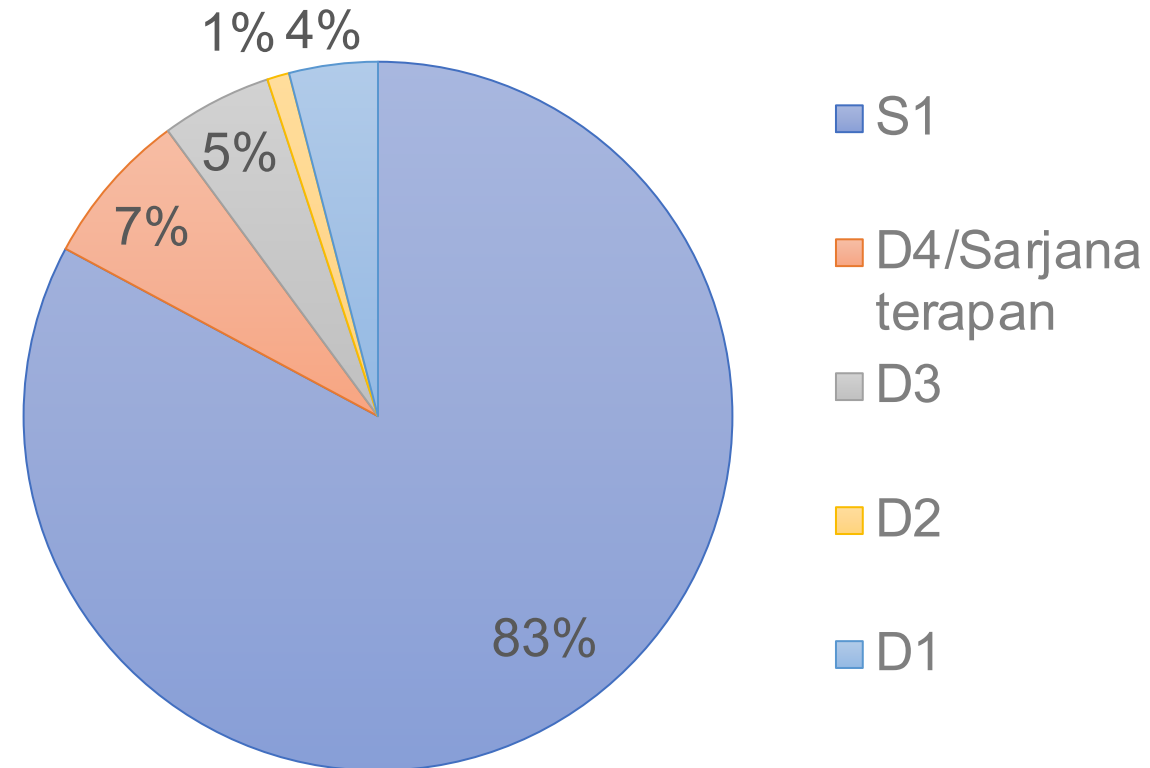
Community segmentation based on the main consideration to enter the university

# SURVEY MINAT SISWA SMK

Survei kepada 61.000 siswa di 993 SMK pada 4 provinsi. Setelah lulus akan melanjutkan kuliah ke program:

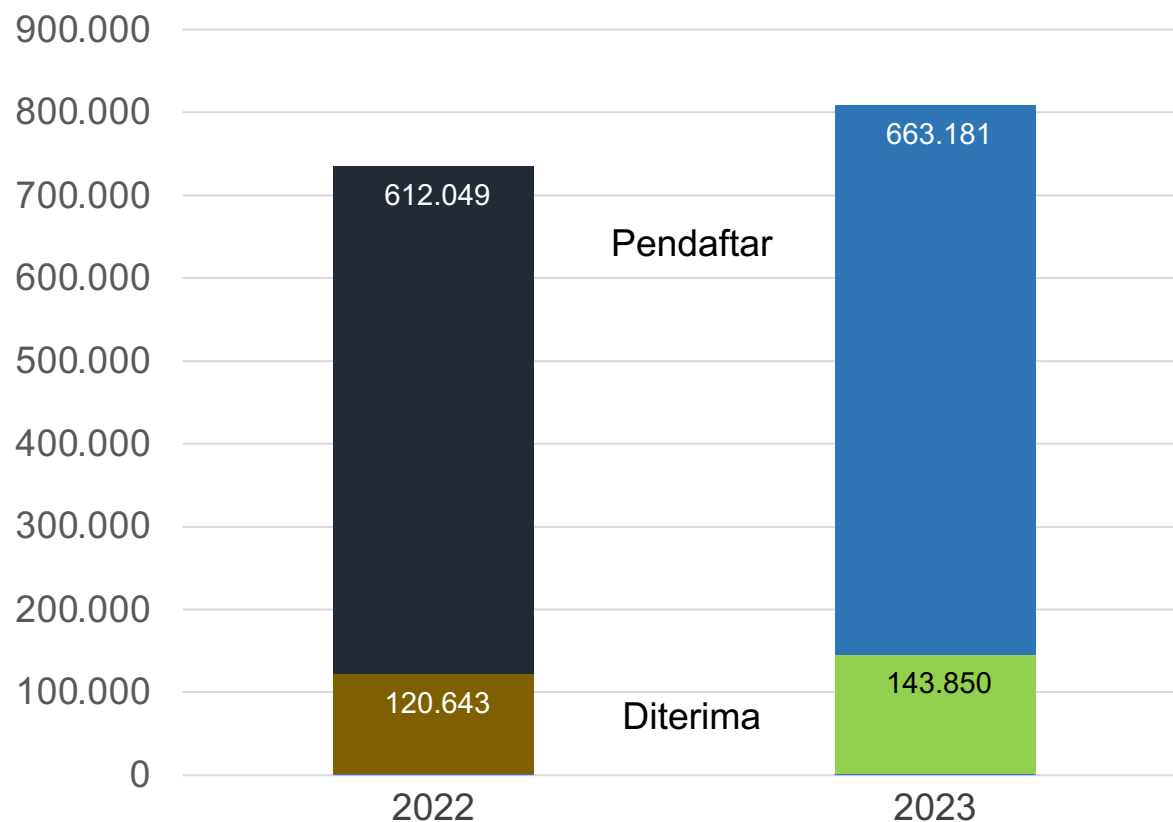
|                    |        |
|--------------------|--------|
| S1                 | 50.354 |
| D4/Sarjana terapan | 4.440  |
| D3                 | 3.330  |
| D2                 | 856    |
| D1                 | 2.359  |

SURVEY 61.000 SISWA DI 993 SMK  
PADA 4 PROVINSI



# SELEKSI NASIONAL MASUK PTN BERBASIS PRESTASI

## HASIL SELEKSI BERBASIS PRESTASI



Jumlah siswa pendaftar berdasar asal sekolah

| Jenis Sekolah                          | Tahun 2022     | Tahun 2023     |
|----------------------------------------|----------------|----------------|
| SMA                                    | 402.922        | 426.243        |
| SMK                                    | 131.148        | 153.446        |
| MA                                     | 77.351         | 82.731         |
| Satuan Pendidikan Kerja sama (SPK) SMA | 468            | 549            |
| Lainnya                                | 160            | 202            |
| <b>Total</b>                           | <b>612.049</b> | <b>663.181</b> |

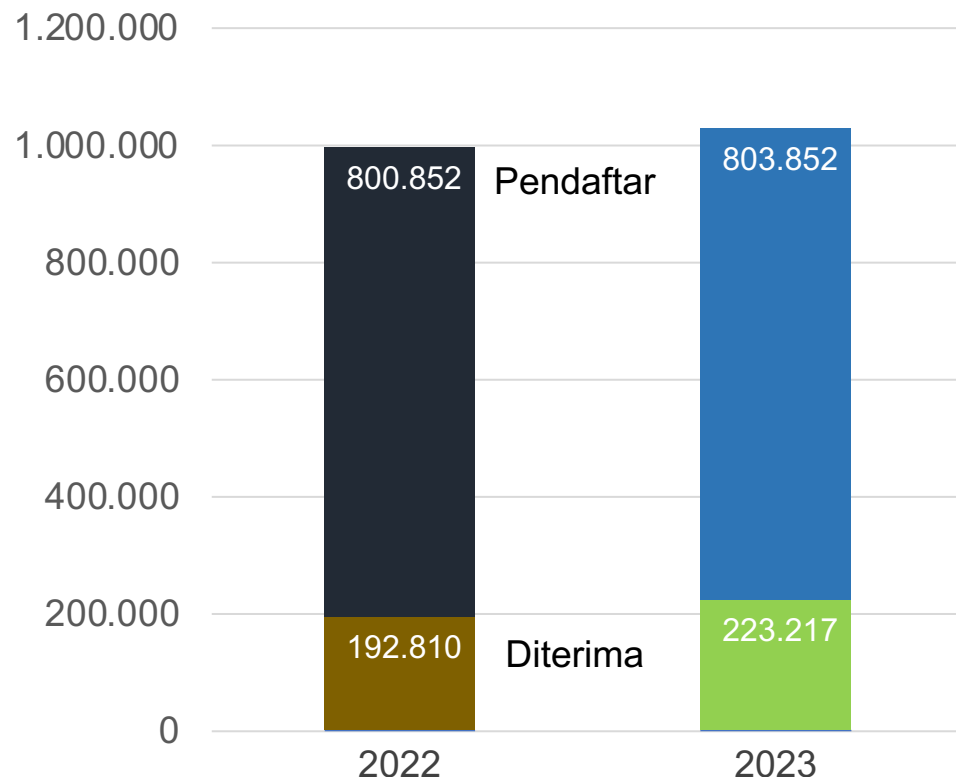
Jumlah sekolah pendaftar

|                    |        |        |
|--------------------|--------|--------|
| Sekolah Finalisasi | 19.204 | 21.702 |
|--------------------|--------|--------|

|                    | 2022    | 2023    |
|--------------------|---------|---------|
| Daya Tampung       | 122,651 | 152,120 |
| Tingkat Keterisian | 98.36%  | 94.53%  |
| Tingkat Keketatan  | 19.71%  | 21.68%  |

# SELEKSI NASIONAL MASUK PTN BERBASIS TEST

## HASIL SELEKSI BERBASIS TES



| URAIAN                                                 | KESELURUHAN   | AKADEMIK (S1) <sup>*)</sup> | VOKASI (D3 dan D4) <sup>**)</sup> |
|--------------------------------------------------------|---------------|-----------------------------|-----------------------------------|
| PENDAFTAR                                              | 803.852       | 768.924                     | 120.022                           |
| PENDAFTAR DITERIMA                                     | 223.217       | 185.467                     | 37.750                            |
| <b>KEKETATAN<br/>(Persentase Diterima : Pendaftar)</b> | <b>27,77%</b> | <b>24,12%</b>               | <b>31,45%</b>                     |

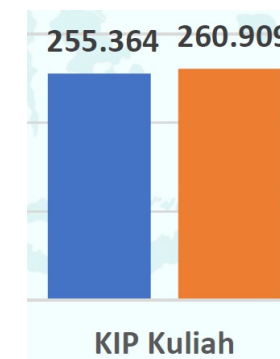
| URAIAN                                                          | KESELURUHAN   | AKADEMIK (S1) | VOKASI (D3 dan D4) |
|-----------------------------------------------------------------|---------------|---------------|--------------------|
| DAYA TAMPUNG                                                    | 259.635       | 208.582       | 51.053             |
| PENDAFTAR DITERIMA                                              | 223.217       | 185.467       | 37.750             |
| <b>TINGKAT KETERISIAN<br/>(Persentase Diterima : Pendaftar)</b> | <b>85,97%</b> | <b>88,92%</b> | <b>73,94%</b>      |

Prodi Akademik = 3.411  
Prodi Vokasi = 1.189

- D4 = 604
- D3 = 585

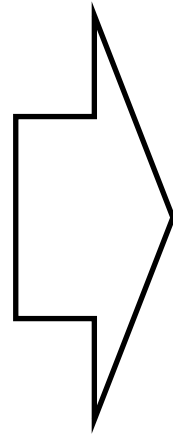
Jumlah Sekolah pendaftar

- 2022 = 18.138
- 2023 = 20.346



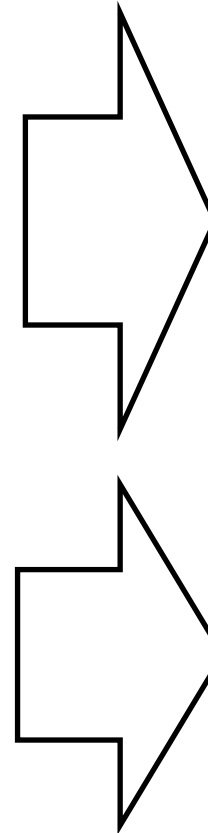
# PENGELOLAAN PERGURUAN TINGGI

Branding



Feature, Quality, Recognition

Prospect



Research

Society

# STRATEGI BRANDING



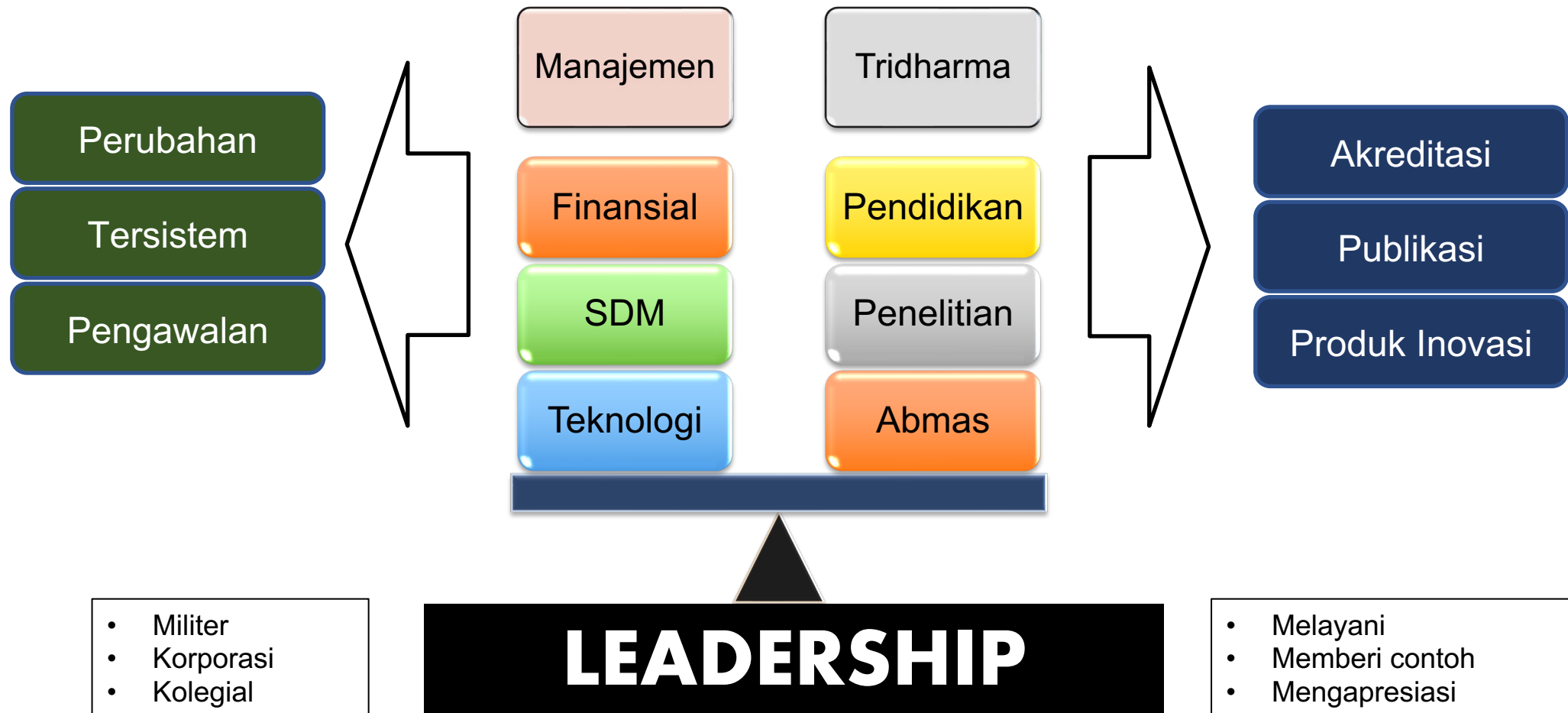
VISI

STRATEGI

AKSI

FINANSIAL & SISTEM INFORMASI

# PENINGKATAN KUALITAS PROSES PENDIDIKAN



PENGELOLAAN DI ITS

# INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS), SURABAYA

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| Faculty of Science & Data Analytics   |                                                       |
| Fac of Industrial Tech. & System Eng. |                                                       |
| Fac of Intelligent Electrical & I     | Fac. of Creative Industry & Digital Business          |
| Fac of Civil, Planning, and Geo       | Faculty of Vocation                                   |
| Faculty of Marine Technology          | Faculty of Medical & Health                           |
|                                       | School of Interdisciplinary Management and Technology |



KOMUNIKASI  
PUBLIK  
ITS  
www.its.ac.id



**27.486**

Students (83% undergraduate)

**1,122**

faculty members

**1780**

International students

**1,098**

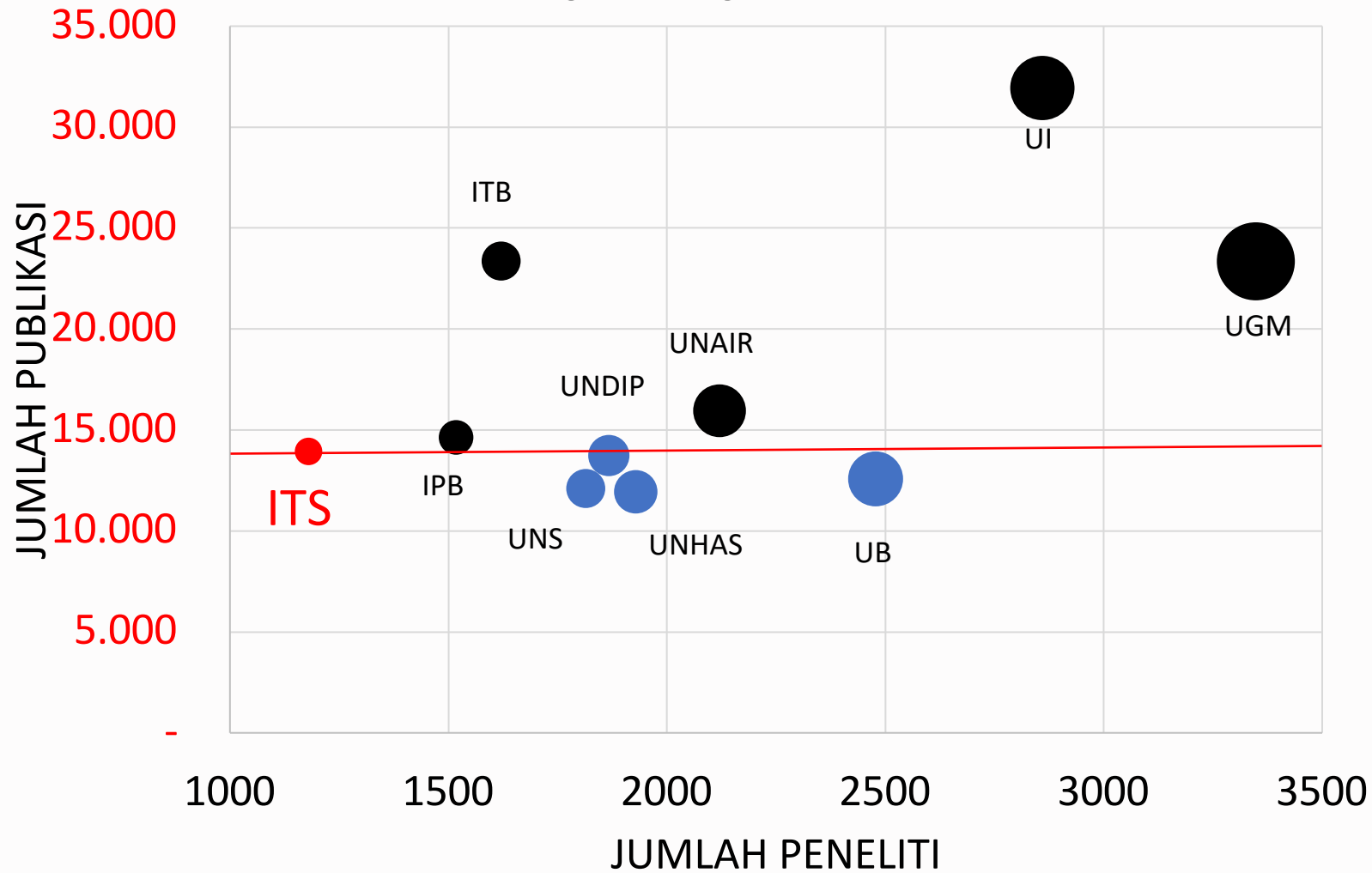
non-academic staffs

**16**

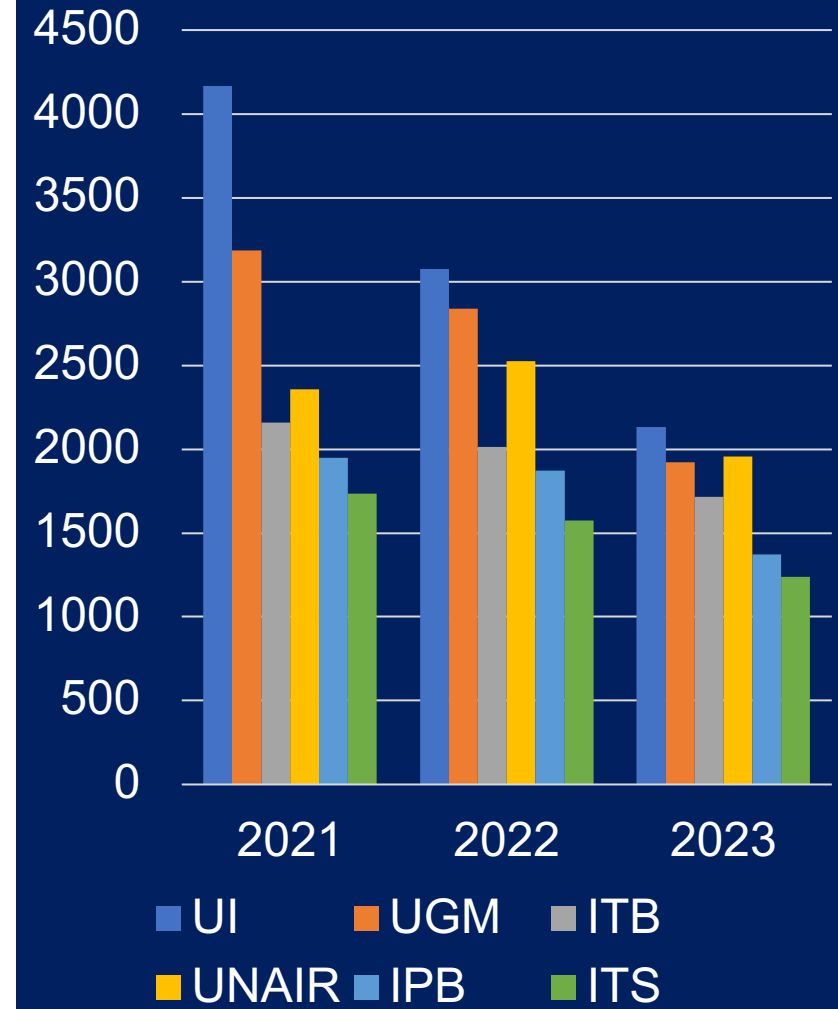
hari Inbound International Students in 2022

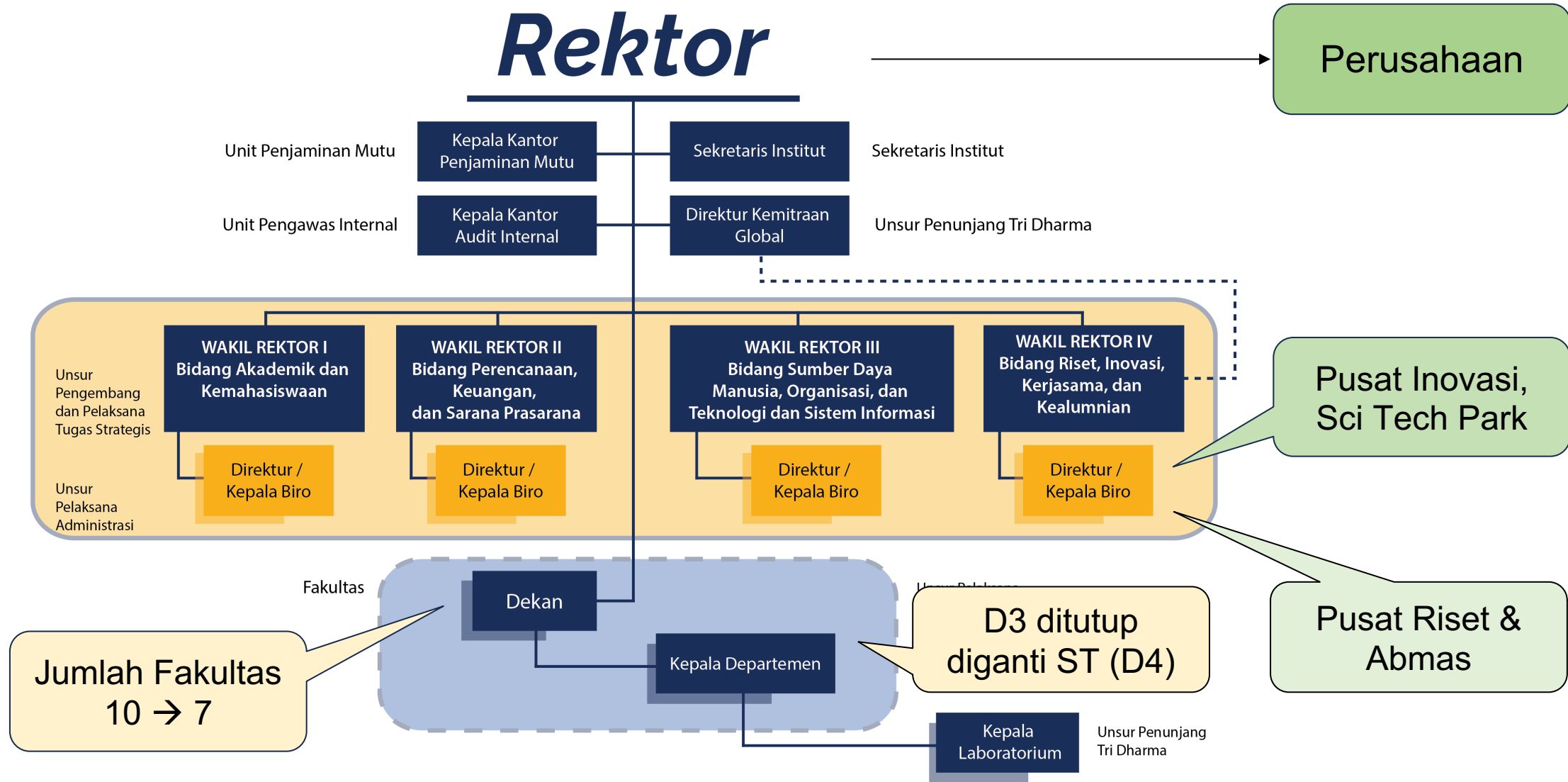
# PRODUKTIFITAS PENELITIAN

PUBLIKASI PENELITI



PRODUKSI SCOPUS/THN





# ADAPTABLE UPGRADE D3 KE D4 (S1T)

D3 ditutup thn 2019

DT Sipil Infra

DT Mesin Industri

DT Elektro Otomasi

DT Kimia Industri

DT Instrumentasi

D Statistik Bisnis

D3 → ST

S1 Terapan Dibuka thn  
2019

1

Rekayasa Perawatan  
Bangunan Sipil

2

Rekayasa Bangunan Air

3

Rekayasa Manufaktur

4

Rekayasa Konversi  
Energi

5

Rekayasa Otomasi

6

Rekayasa Kimia Industri

7

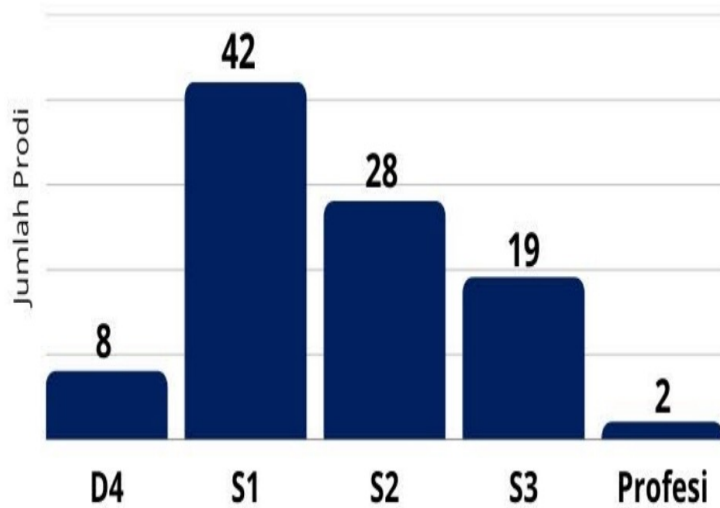
Rekayasa Instrumentasi

8

Statistika Bisnis

# PEMBUKAAN PROGRAM STUDI BARU (GROWTH)

## 99 Prodi



Prodi Baru = 32

S3 = 4

S2 = 9

S1 = 11

S1T = 8

## PERTAMBAHAN PROFESOR (PENGUKUHAN KUMULATIF)



- 3 Gedung Kuliah baru @11 lantai
- Gedung Techpark
- Pembaharuan alat Labs
- Smart Classroom



# RESEARCH - INNOVATION CENTER & FUNDING INSTITUTION



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



University

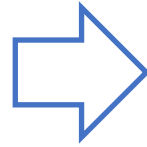
Industry

RISPRO:      Competition  
International Collaboration  
Invitation  
Mandatory

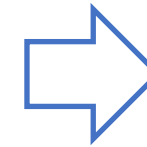


# ITS RESEARCH & INNOVATION STRUCTURE

Research & Community  
Engagement



Innovation & Science  
Technopark



Business Entity

## Research Center

- 1 Manufacturing, Transportation, and Logistics
- 2 Sustainable Energy
- 3 Artificial Intelligence and Health Technology
- 4 Advanced Material and Nano Technology
- 5 IoT and Defense Technology
- 6 Agri-f

## Pusat Kajian

- |    |                |   |                                            |
|----|----------------|---|--------------------------------------------|
| 7  | Disas<br>Chang | 1 | Potensi Daerah dan Pemberdayaan Masyarakat |
| 8  | Marine         | 2 | Teknologi Tepat Guna                       |
| 9  | Funda          | 3 | Halal                                      |
| 10 | Infras         | 4 | Sustainable Development Goals              |
|    |                | 5 | Kebijakan Publik Bisnis dan Industri       |

## Science Tech Park

- 1 ICT & Robotic
- 2 Automotive
- 3 Creative Industry
- 4 Maritime



Robot assistance  
for hospital



Electric Vehicle



Design of Train body

## Company

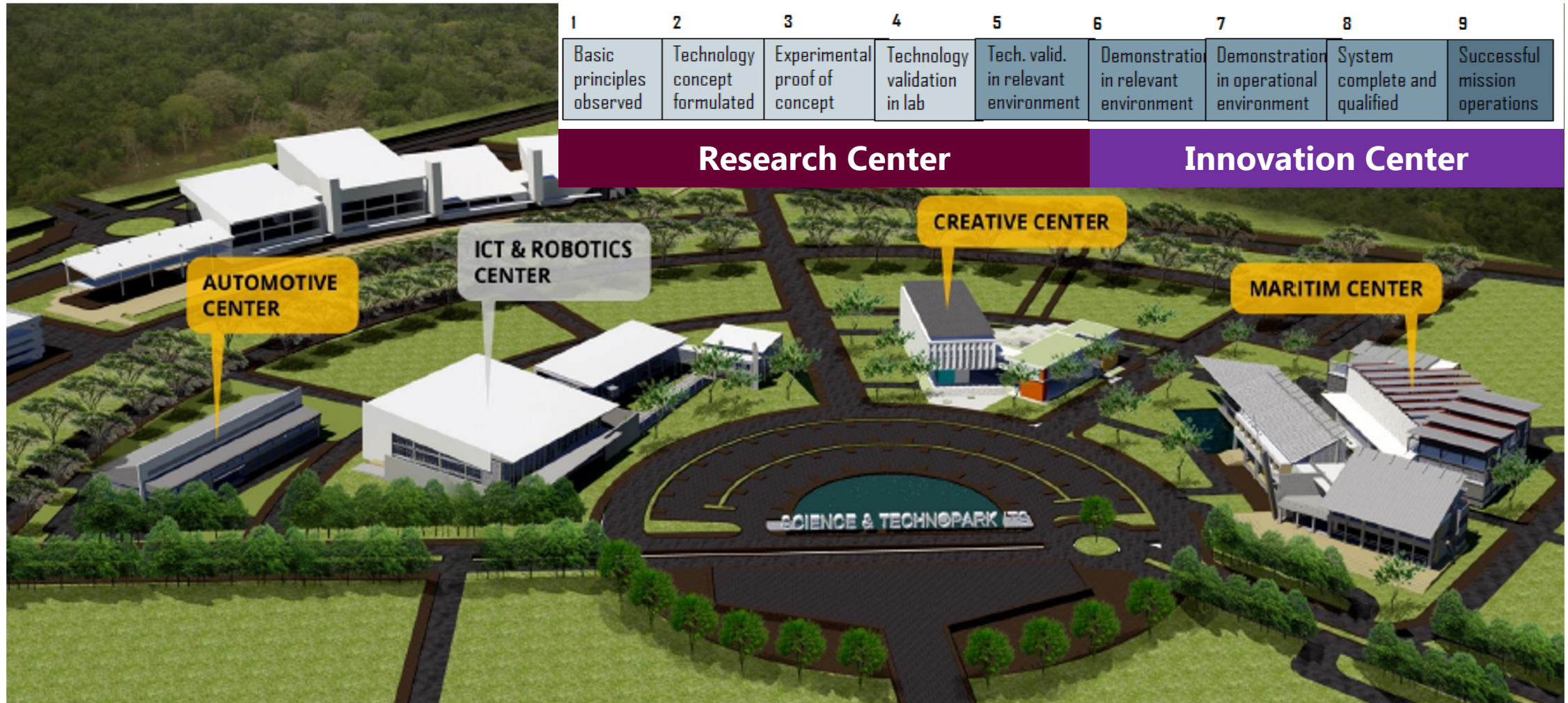
- 1 PT. ITS Kemitraan
- 2 PT ITS Tekno Sains

## Subsidiary

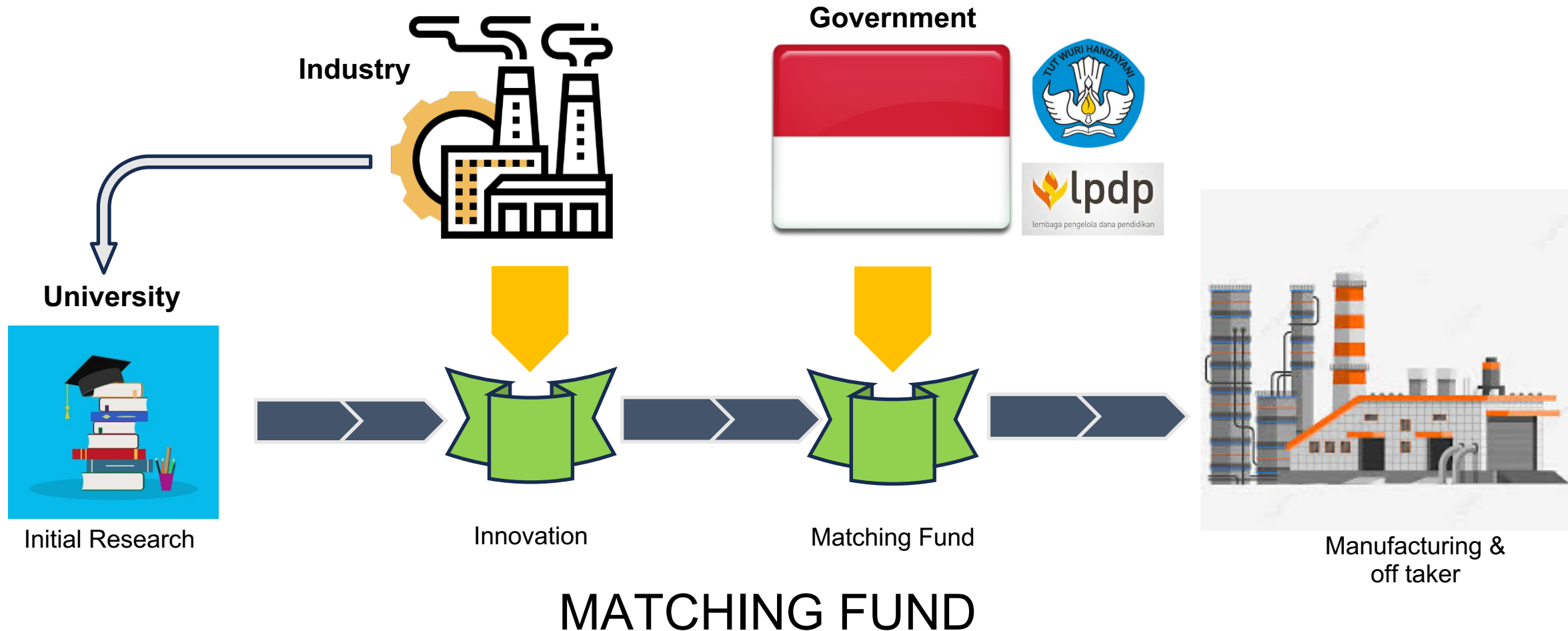
1. Consultancy
2. Transportation
3. Automation
4. Health Care
5. Energy
6. Food



# ITS - SCIENCE TECHNOPARK\*

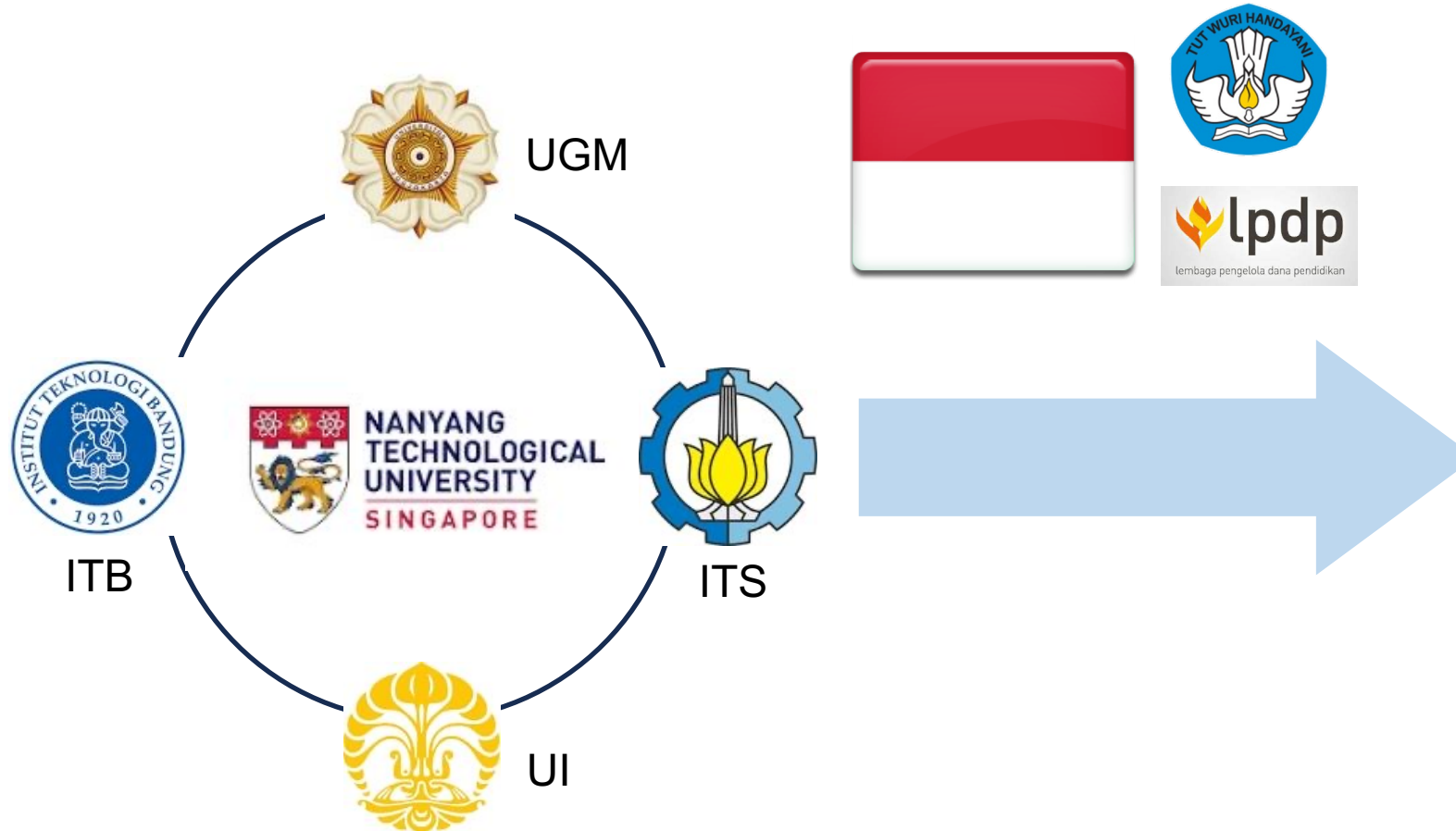


# RESEARCH FUNDING SCHEME INNOVATIVE PRODUCTIVE RESEARCH (RISPRO)

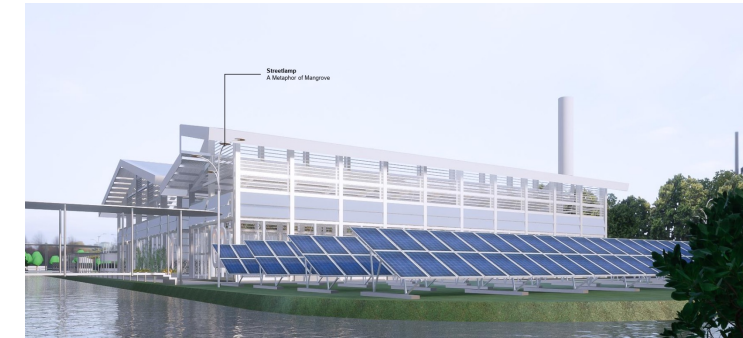


# RISPRO MANDATORY

## INSPIRASI – On going Joint Research of 5 Universities



## REIDI Renewable Energy Demonstrator



- Renewable Energy
- Circular Economy
- Smart City

# ITS Innovation Products : Transportation



KEMENTERIAN SOSIAL  
REPUBLIK INDONESIA

Special design &  
manufactured of  
electric Motor  
Trail for Rural  
Papua Province

The 1<sup>st</sup> Electric Scooter of Indonesia



Prof. Dr. Mochamad Ashari

Electric bus for  
G20 in Bali



Special design &  
manufactured of  
Long boat for  
rural Papua  
Province

# ITS Innovation Products : Creative Design



**Dr. Agus Windharto, the designer**



**Design and Exterior & Interior of  
Carbody LRT Jakarta & Palembang**



**Design and Exterior & Interior  
of Carbody Medium Speed  
Train**

# ITS Innovation Products : Robotic for Transportation



*autonomous car, implemented for shuttle car inside the campus*



*autonomous boat, for small island transportation, rescue, etc.*

# ITS Innovation Products : ICT & Robotic



PC tablet

digITS



## *digITS, PC tablet for education:*

PC Tablet special designed by ITS for students of primary and secondary schools located in rural/ remote areas.

<https://digits.itsteknosains.co.id>



**RAISA**, robot assistance for hospital, helping to distribute medicines, food etc into the isolated room of infectious patients. The robots have been used in educational hospitals in Indonesia.



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# ITS Innovation Product : Industry Automation

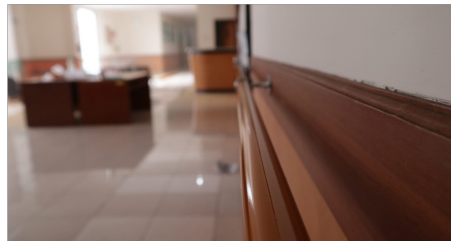
## ITS & Panasonic Collaboration: LED Bulb Production Line Automation



Line production and autonomous robot in collaboration with industry.

# Anti Virus, Bacteria Coating (CoFilm<sup>+</sup>)

## COFILM+ PRODUCT SUMMARY



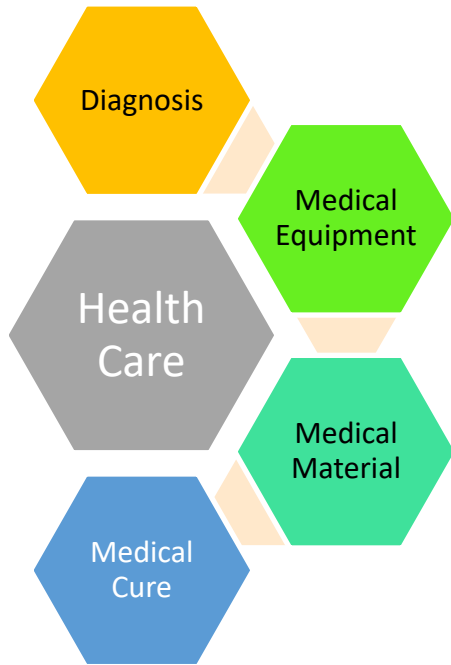
Permanent Antimicrobial Surface Protection  
with Nanocopper Technology



**Inventor CoFilm<sup>+</sup>:**  
Tim Dr. Agung Purniawan S.T. M.Eng.



# ITS INNOVATION PRODUCTS – HEALTH CARE



Dr. Djoko Kuswanto, the inventor



Launching of ITS innovation products of Health Care, by the Minister for Health in JCC Jakarta, 18 Oct 2023.

Prof. Dr. Mochamad Ashari

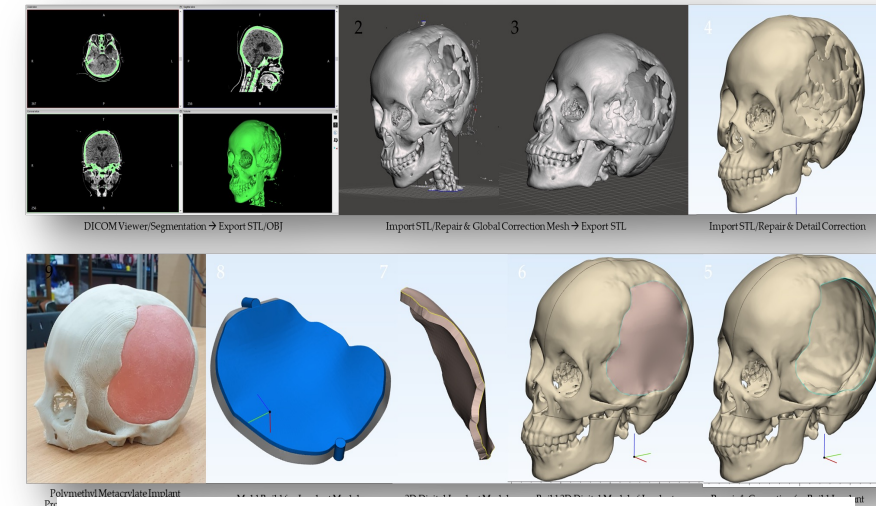
Surgery instrument



Artificial hand



Integrated 3D Digital Design Workflow Use in Medical Cases (Cranioplasty Surgery)



3D designed & Implant for skulls



***[www.its.ac.id](http://www.its.ac.id)***



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**@itseurekatv**