

Indonesian Actuaries Conference 2019

Actuaries for the Industries 4.0

Jakarta, 18th October 2019

“Delivering The Source of Future Actuaries to Strengthen Industry 4.0 in Indonesia”

BASUKI WIDODO

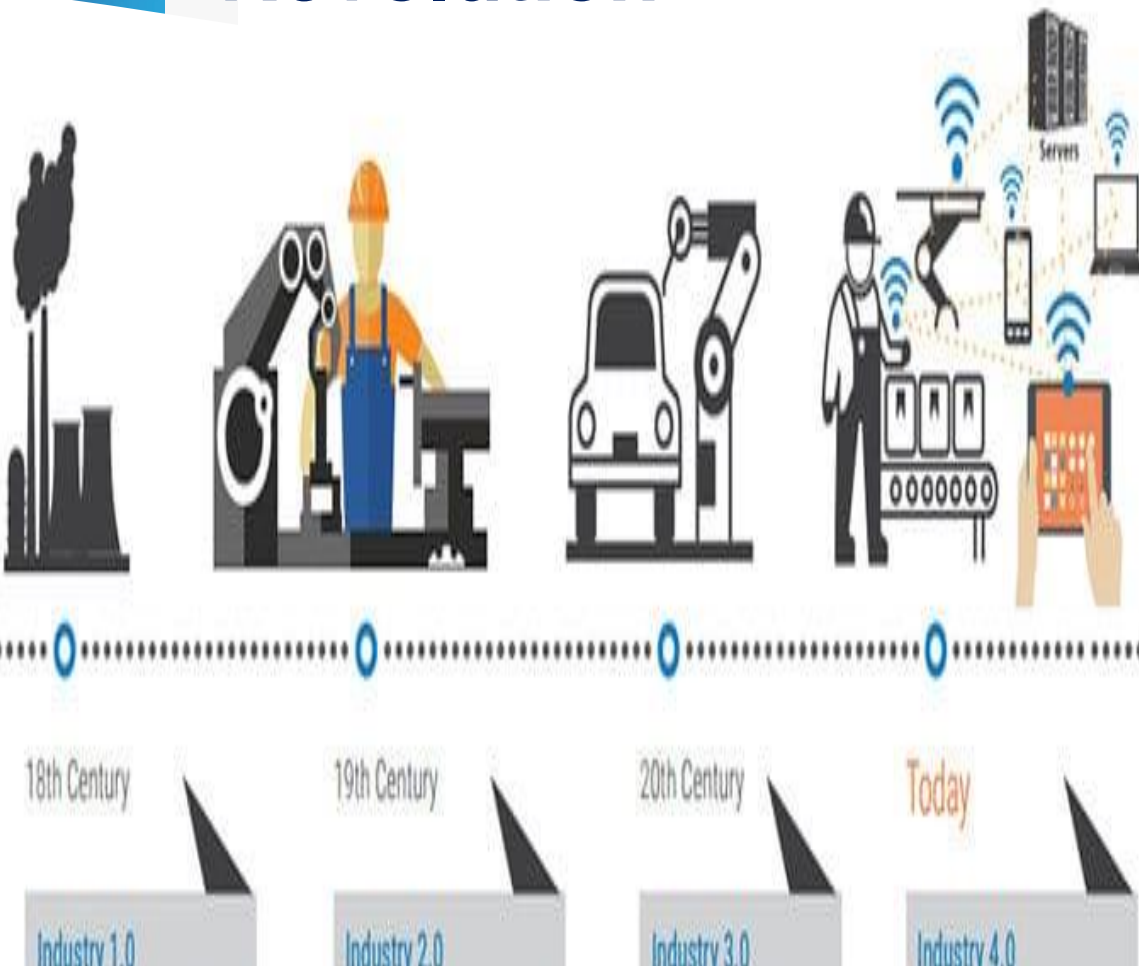
Email: b_widodo@matematika.its.ac.id

*Dean of Faculty Mathematics, Computing, and Data Science
Institut Teknologi Sepuluh Nopember (ITS), Indonesia*

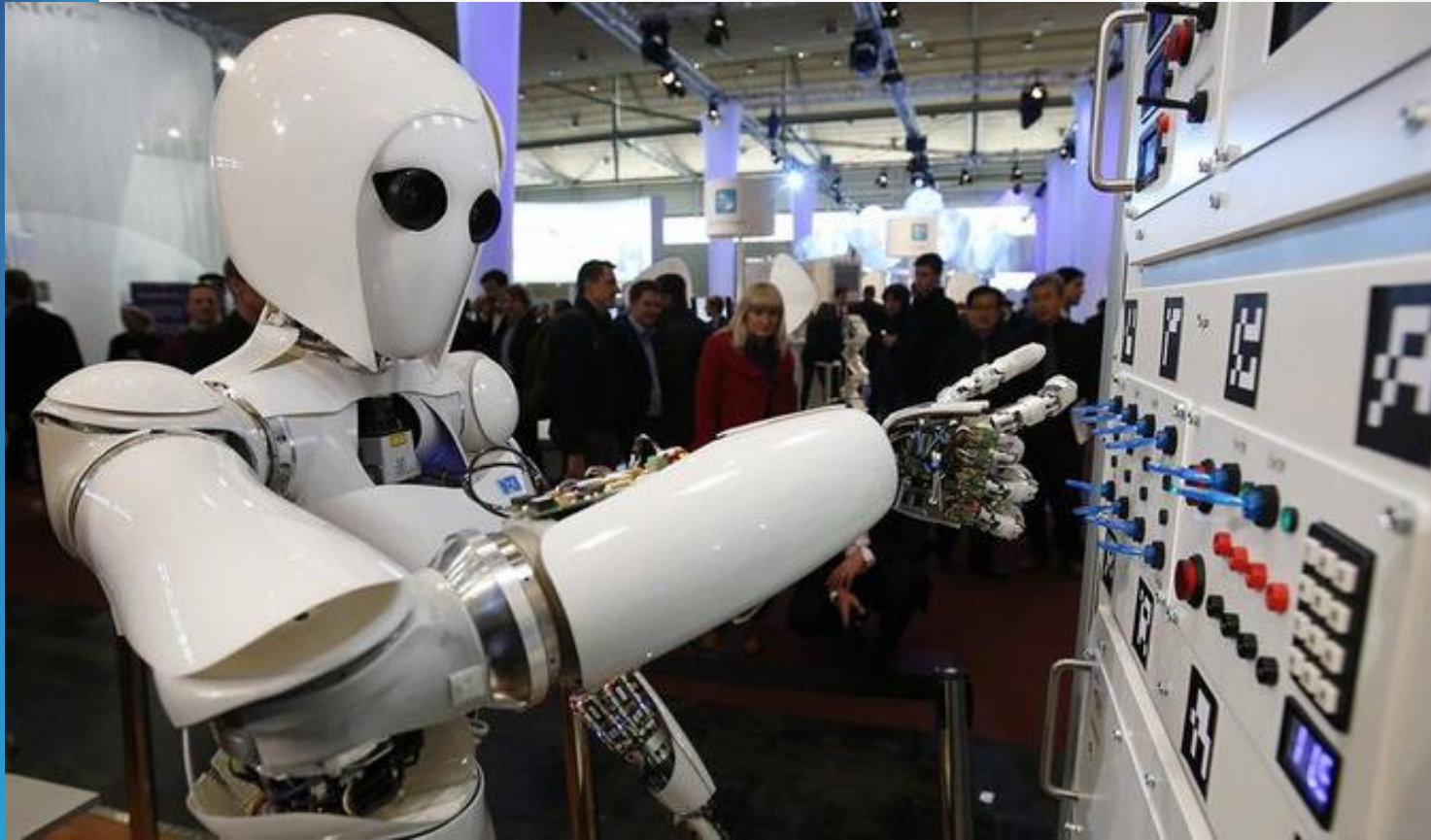


A Glimpse of the History of the Industrial Revolution

The real phase of change experienced by humans as a result of the times is the Industrial Revolution. Revolution:



- Industry 1.0 started in the 18th century marked by the invention of a steam engine for efforts to increase productivity which is of high value in supporting the effectiveness and efficiency of human activities, for example in England, at that time, weaving companies used steam machines to produce textile products.
- Industry 2.0 began in the 1900s which was marked by the discovery of electric power, mass production and quality standardization,
- Industry 3.0 began in the 1970s marked by mass adjustments and the flexibility of automated manufacturing with robots.
- Industry 4.0 is the name given to the trends in automation and data exchange, where machine and human efficiency have begun to be connected to the internet of things. This is characterized by physical cyber and through IoT-based computerization with a physical cyber-system that humans can connect with the world through an internet network.



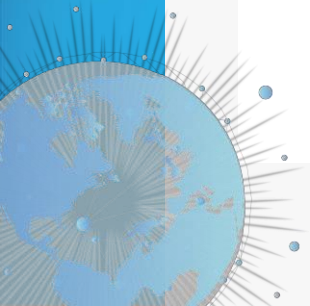
CONCERNING HIGHER EDUCATION:

***Education Quality
(Graduates, Research
Products and
Publications)***

***The Role of Education in
Supervising the
Development of HR,
Health, Law, Economics
(Innovation in Various
Sectors)***

***Who Will Survive in the
Future (> 2025)***

***What kind of education
can deliver the future
generation?***





It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.
(Charles Darwin)

Who knows what new jobs and careers are available in 2020, 2030, 2040?

How can we survive in the industrial era 4.0?

4

Challenges in the Development of Human Resources in Indonesia

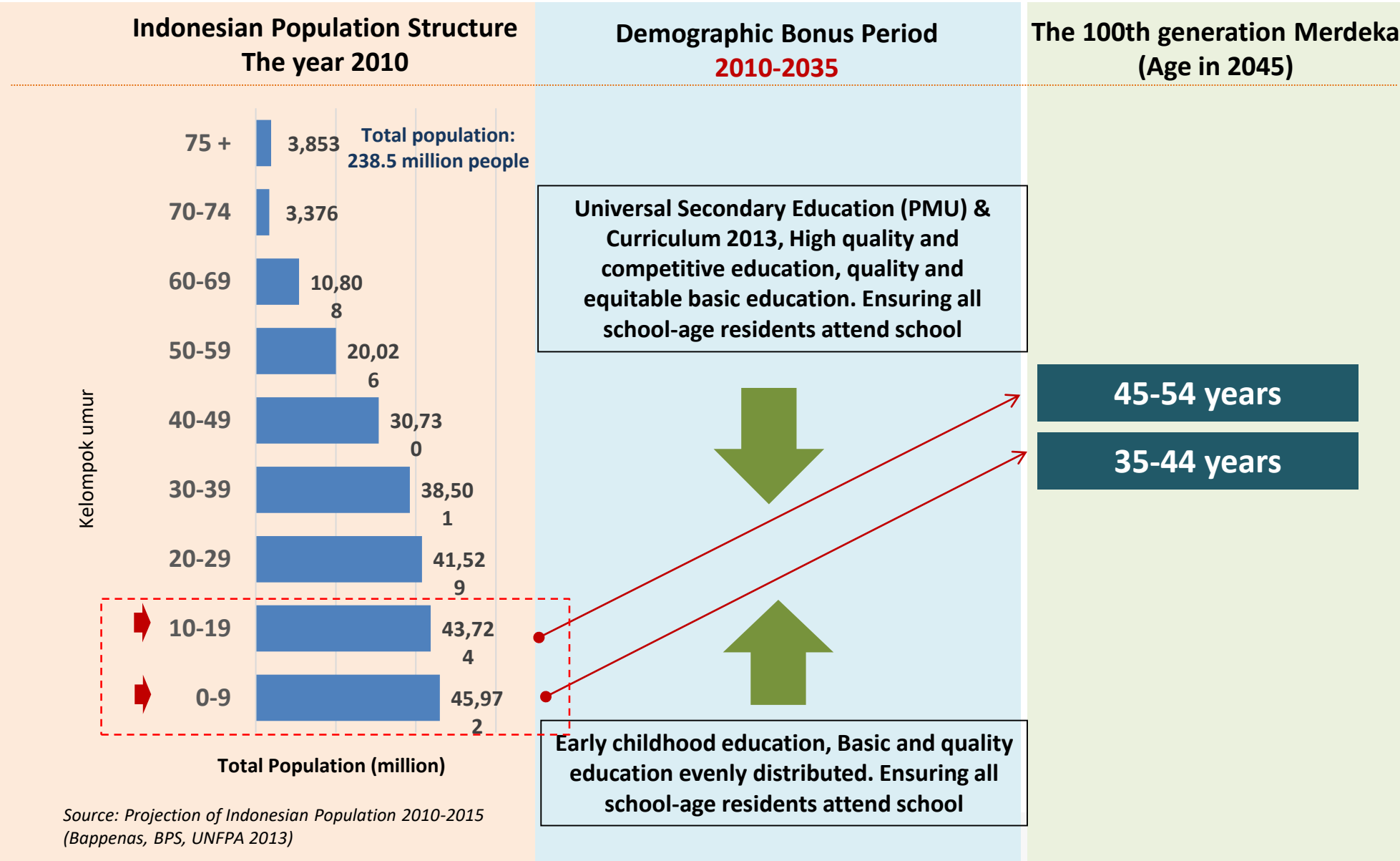
Industrial Era 4.0

- ❑ The relevance of education and employment, needs to be adjusted to the development of the era and science and technology while still paying attention to aspects of humanities (WEF, 2017)
- ❑ 36/137 INDONESIA COMPETITIVENESS (BPS, August 2017) 3rd Singapore Malaysia 23rd 32nd Thailand
- ❑ Total Open Unemployment \pm 7 million from \pm 128 million workforce
- ❑ Employers complaint that workers do not have sufficient skills 58% of Employers Source: Mourshed, Farrell, Barton (2012)
- ❑ Education to Employment: Designing a System that Works (survey of universities and industries in 25 countries). 72% of Educators The job market requires a combination of different skills than those currently provided by the tertiary education system (Marmolejo, World Bank, 2017)

DISRUPTIVE TECHNOLOGY IN HIGHER EDUCATION

- ❑ Disruptive Innovation In Higher Education: A disruptive innovation brings to market a product or service that isn't as good as the best traditional offerings, but is less expensive and easier to use (Prof. Clayton)
- ❑ Competency-based Education: students have different abilities. Technological assistance is used to make it easier for students to choose courses according to their abilities
- ❑ The Internet of Things: Increased connectivity of all existing equipment will make communication between students and lecturers, tutors, and universities
- ❑ Virtual / Augmented Reality: virtual reality can make it look like students are actually doing practicums (especially for practicums that are dangerous or complex)
- ❑ Artificial Intelligence: online learning platforms with the help of AI can adapt to the needs of students who are Disruptive Innovation In Higher Education

100 Years of Indonesian Golden Generation Independence



“Who owns the information, owns the world”, Rothschilds

BIG DATA & ANALYTICS

“The world most valuable resource is no longer oil, but DATA”

Data Analytics



SCALE OF DATA
VOLUME



FORMS OF DATA
VARIETY

**BIG
DATA**

VELOCITY
ANALYSIS OF DATA-FLOW



VERACITY
UNCERTAINTY OF DATA



Kecakapan Abad 21

21st Century learning:

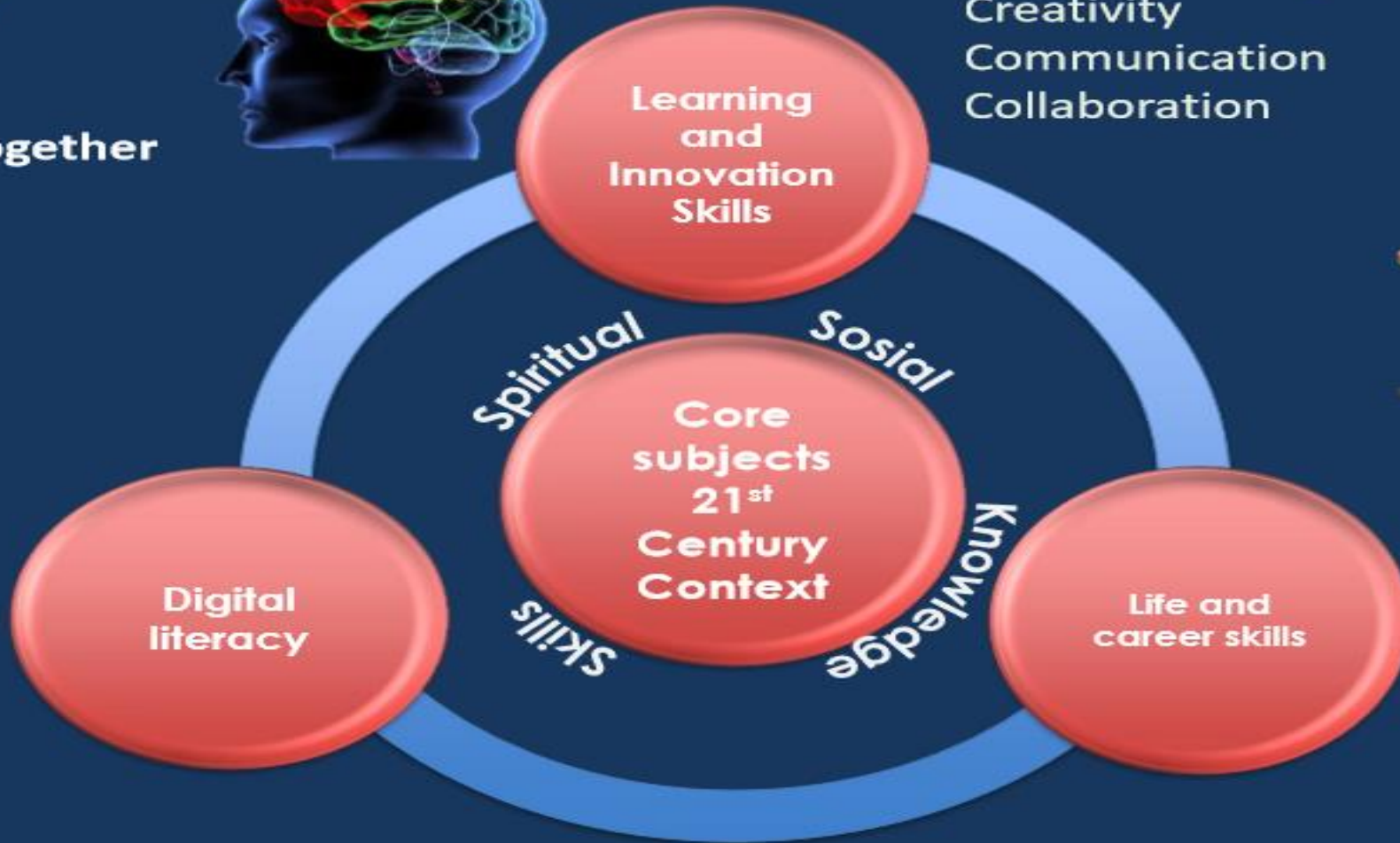
- To know
- To do
- To be
- To live together



Critical thinking
Creativity
Communication
Collaboration



Information
Media, and
ICT literacy



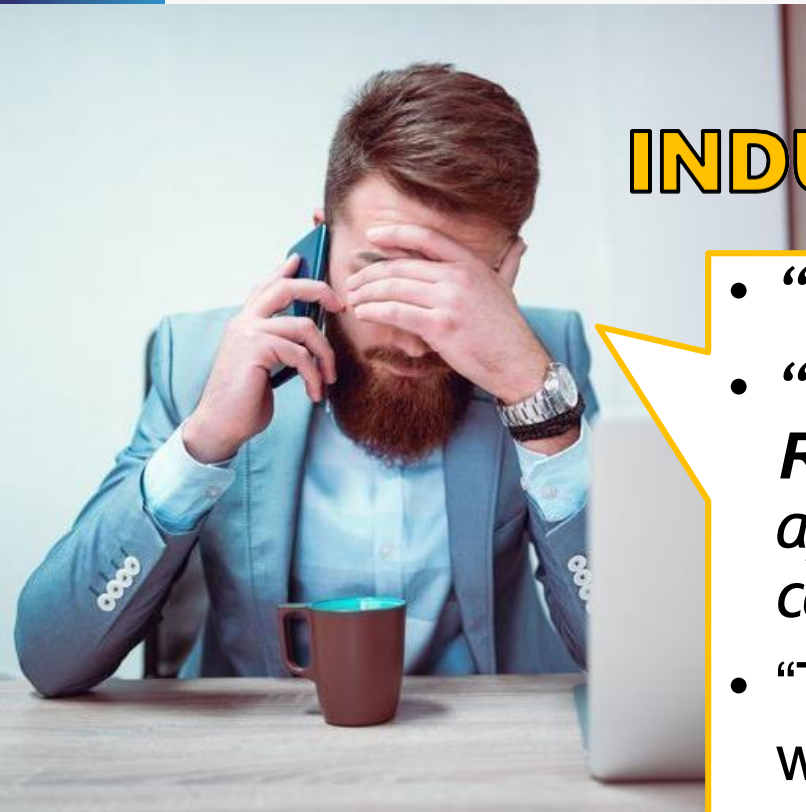
Flexibility
Initiative
Leadership
Social-skills
Cross cultural
Productivity
Accountability
Life-long learner

Driving 21st Century Competency



Nizam, 2016

Source: Nizam, Puspendik Balitbang Kemdikbud

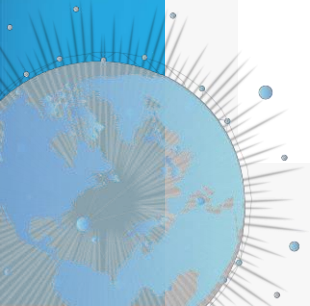


INDUSTRIES Say:

- *“It’s Difficult to find Competent & Reliable Employee”*
- *“It’s too costly to manage an Open External Recruitment, we received more than 11,000 applications just for 80 positions and the final candidates are not good” (Bank Indonesia, HR Director, 2018)*
- **“The University Curriculum is Not Match with the current Industry’s Needs”**

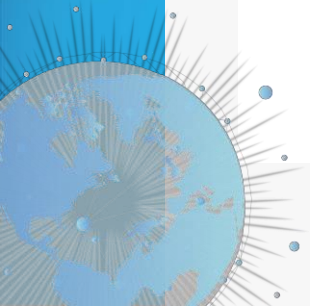
ALUMNI Say:

“It’s Difficult to find a Job”



CHALLENGE: INDONESIA

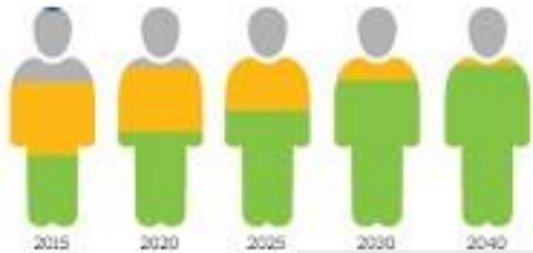
- **Population (2019) = 267 million people**
- **Indonesian Workforce (Feb, 2019 - BPS)**
= 136.18 million people
(129.36 million or **95%** have been working)
- **52.4 million (40.51%) just graduated Elementary School or below**
- From 7 million Unemployment, **630.000 or 8.8% are Graduates from University**



CHALLENGE:

Millennials workforce: Priorities vs. Fact

Millennials and beyond will make up to 75% of the global workforce by 2025



Top 5 priorities when millennials look for a job

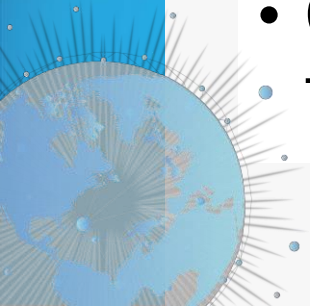


Resource: *Millennials Careers: 2020 Vision*, Manpower Group

- **Too much Demanding**
(Salary, Facility, Flexibility, etc)
- **Lack of Competencies**
(particularly Skills)
- **High Turnover**
(not loyal, cannot adopt company culture, not persistent)

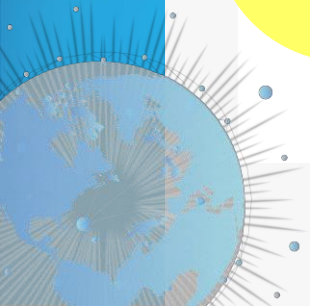
FACTs about **STUDENTs** & **Alumni:**

- **Only Apply for Jobs/Internships at Well Known Companies**
→ *Do Promotion about Company Brands, Products & Work Environment since their Employee Candidates are still Students!*
- **It's Hard & need long time to shape & educate a Company Culture, Values, & Standard** → *Start since they are Students!*
- There **too many company competitors** with high demand on qualified Human Resources, the later you recruit the less you get the top alumni!
→ *Start since they are Students!*
- Companies require their new employees familiar with their problems, technologies, & solutions → *Start since they are Students!*



PROBLEM QUESTIONS:

- 1. “How to assist Industry Partners to find Students/Alumni who have knowledge & skills fit with the company requirements & company culture/standards?”**
- 2. “How to assist our Students/Alumni to get Good Jobs as early as possible?”**





***Shift Ahead the Company Recruitment Funding into TEACHING Stage Activities!**

*** Do Orientation Training & Selection since they are Students!**



- **Guest Lecture**
- **Manual Books**
- **White paper / Case Study Reports**
- **Workshop Tools**

- **Scholarship**
- **Project Grant**

- **Internship** (*including for the Scholarship Awardee to educate the company culture*)
- **Final Project**

- **Campus Recruitment**
- **Career Fest (2x/year)**



Stages

**Strengthening
internal capabilities
2018 - 2019**

**Improving external
cooperation
2019 - 2022**

**International
certification /
accreditation
2022 - 2025**



Target

Improving the performance of actuary department in order to operate as an educational organization in a healthy, quality, efficient, productive, and accountable with the application of appropriate management concepts.

Improving the quality of human resources in the areas of management, education, research and empowerment through skills education / training and formal education.

Achievement Strategies

1. Applying appropriate management concepts: complement the organizational structure with required positions and be filled with competent people, establish work plans, performance standards and monitor and control and evaluation
2. Applying good governance and organizational governance accordingly.

Choosing highly qualified personnel for the appropriate field of work.

Including supporting staffs in training, workshops and further education.



Target

Promoting Actuary department as an institution that provides quality actuarial science, research and community empowerment through reputable National Accredited and International publications.

Developing networks and cooperation at national and international level through information technology, alumni, and industrial relations.

Achievement Strategies

1. Supporting the participation of lecturers in seminars or conferences both nationally and internationally by providing support and assistance costs.
2. Increasing international cooperation in research and education.
3. Establishing wider cooperation with domestic government and private institutions

1. Improving the quality and quantity of National and International publications by providing financial support and facilities.
2. Increasing the involvement of actuary department in solving the problems within the community surrounding the campus and other places that require it.
3. Developing networks and cooperation at national and international level through Information Technology media with alumni.
4. Improving the quality of teaching for students so that the alumni produced can show good quality performance.
5. Increasing actively participation in national and international scientific activities / forums.



Program of Actuary department in Teaching/Learning



- Evaluation of Syllabus every year
- Improving Accreditation Status
- Increasing Number of Guests Lecture of Overseas and Domestic University
- Increasing Number / qualified Seminar / National / International Conference
- Increasing Number of Overseas Student Exchange
- Monthly seminars



Program of Actuary Department in Staff Development



- Increasing Number of Professor and Doctor
- Upgrades Academic Staffs In The Service (with courses in English / Foreign Language and Computer)
- Increasing Number of Staff Exchange With Foreign Institutions in the framework of staff mobility program.



GUEST LECTURE by INDUSTRIES





Professional Workshop Series





Job Skill Training





Career Seminar



LAYANAN

TES KESIAPAN KERJA (PSIKOTES)

Tes psikologi akan dilaksanakan oleh psikologi Subdit Pengembangan Karir & Kewirausahaan Mahasiswa ITS (PKKM) / SAC-ITS yang berpengalaman menangani mulai dari instruksi tes hingga analisis dan pelaporan.

Tes psikologi dapat dilakukan dengan berbagai metode sesuai kebutuhan dan kesepakatan dengan pihak pengguna jasa layanan. Metode yang digunakan: Tes tulis, Focuss Group Discussion (FGD), wawancara, observasi, dan lainnya.

Alat psikotes yang digunakan telah terstandar. Aspek yang diukur meliputi aspek intelegensi, aspek sikap kerja, aspek kepribadian/personality, aspek manajerial, dan aspek lainnya. Psikotes digunakan dalam proses seleksi rekrutmen, assessment, promosi. Untuk level mulai dari fresh graduate, experience, superior serta level manajerial.

TES

PSIKOTES AKADEMIK (TPA)

Tes Potensi Akademik akan dilaksanakan oleh Tim TPA - ITS yang berpengalaman menangani seleksi ujian masuk Program Pasca Sarjana ITS dan Mahasiswa Baru.

Waktu dan tempat pelaksanaan sesuai kesepakatan bersama antara pihak pengguna jasa layanan dengan Tim PKKM ITS. Tes dilaksanakan pada hari kerja (catatan: apabila jumlah peserta banyak, maka pelaksanaan dapat berlangsung sesuai kesepakatan). Waktu tes mulai 08.00 sampai selesai.

FOTO RUANG JOURNEY

GEDUNG PKKM (SAC)-ITS LANTAI 2



LOKASI

GEDUNG PKKM (SAC)-ITS LANTAI 2



RUANG AMBITION



RUANG IMPROVEMENT



RUANG BRAVERY



Campus JOB RECRUITMENT

DATANG & IKUTI ! BURSA KARIR ITS 36

 **03-04 Oktober 2018,**
Jam 08:00-16:00

 **Call us for info**
0896-7900-8467

BURSA KARIR ITS KE 36

Bursa Karir ITS adalah event tahunan ITS bagi Masyarakat Umum dan khususnya bagi Alumni ITS dan Member Karir ITS untuk memperoleh Peluang Pekerjaan dan Karir. Menghadirkan lebih dari 30 Perusahaan Nasional dan Multinasional dan dihadiri rata-rata 4000 pengunjung setiap harinya.



PRESENTASI INDUSTRI

Penjelasan Company Profile, penjelasan posisi yang dibutuhkan, tips-tips untuk menjadi calon pegawai

- ✓ Memperoleh Lowongan kerja & karir
- ✓ Melamar sekaligus langsung mengikuti proses seleksi pekerjaan di tempat
- ✓ Meningkatkan pengetahuan & skill melalui sesi Training & Presentasi



JOB SKILLS TRAINING

Tips membangun Personal Branding, Self Promote & Self Presentation: Bagaimana membangun kepercayaan diri? Bagaimana menemukan & membangun Nilai Jual anda bagi perusahaan?

DAFTAR & DAPATKAN FASILITAS KHUSUS MEMBER!!!

- ✓ Daftar member ITS Career Center (SAC) pada link berikut : <https://intip.in/jjSty>
- ✓ Dapat melamar pekerjaan secara online pada website careers.its.ac.id
- ✓ Gratis masuk Bursa Karir ITS ke-35 dan seterusnya Discount khusus untuk event-event profesional SAC
- ✓ Rutin memperoleh informasi lowongan pekerjaan dari perusahaan - perusahaan BUMN, Swasta, Nasional, maupun Internasional yang membutuhkan rekrutmen pegawai

PERUSAHAAN PARTISIPAN



6,000 Job Seekers in 2 Days
40 - 54 Companies /events





Thursday, 15 Nov 2018

PUSAT PENGEMBANGAN KARIR DAN KEWIRAUSAHAAN MAHASISWA INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Gedung SAC Kampus ITS JL. Arif Rahman Hakim Sukolilo Surabaya 60111
Telp : 0315925880
<https://careers.its.ac.id>, Email : careersinfo@its.ac.id

[Contact Us](#) [Login](#)

- [Home](#)
- [Career Information](#)
- [Jobseeker & Student](#)
- [Employer](#)
- [Entrepreneurship](#)
- [Tracer Study](#)
- [Tentang kami](#)

PENGUMUMAN PSIKOTES DAN WAWANCARA PT. ADIKARI WISESA INDONESIA

HARI / TANGGAL : RABU, TANGGAL 26 SEPTEMBER 2018
TEMPAT : GEDUNG PKM (SAC) LT.2 KAMPUS ITS SUKOLILO SURABAYA
WAKTU : PUKUL 08.00 WIB - SELESAI
KETERANGAN : PESERTA MEMBAWA KTP / IDENTITAS DIRI
 - HADIR 30 MENIT SEBELUM TES, BERPAKAIN RAPI DAN TIDAK MEMAKAI JEANS

PENGUMUMAN PSIKOTES DAN WAWANCARA PT. ADIKARI WISESA INDONESIA
 - MEMBAWA ALAT TULIS (BOLPEN, PENSIL 2B & PENGHAPUS)
 - PESERTA DILARANG PINDAH JADWAL TES

Artikel Terbaru

BERITA UMUM

Shopee Campus Competition

08/11/2018 08:09 WIB
Shopee Campus Competition

Lowongan

TERBARU TERPOPULER KATEGORI

- 1 POS... PT. INDO NE... SAH... AL... (POSSE...)
Surabaya, Jawa, Indonesia
- 1... PT. ADICIPTA CARSAANI EKAKARYA (ADINS CENTER OF EXCELLENCE)

ONLINE JOB APPLICATIONS

20,000 Members of PK2M Job Seekers



Pusat Pengembangan Karir dan Kewirausahaan Mahasiswa Institut Teknologi Sepuluh Nopember

KARTU ANGGOTA

Gedung SAC, Kampus ITS Sukolilo
Jawa Timur, Surabaya
Indonesia
60111

Email : careersinfo@its.ac.id
Phone and Fax 031) 5994251-55 ext. 1135
(031) 5925880
Website : careers.its.ac.id



No. : 01595/SAC/04/2017
 Nama : Member ICC
 Tempat/Tgl Lahir : Surabaya, 05-04-2017
 Perguruan Tinggi : INSTITUT TEKNOLOGI SEPULUH NOPEMBER
 Jurusan : Teknik Informatika
 Alamat : Gedung SAC - Kampus ITS Sukolilo Surabaya Kota Surabaya J
 Telp : 083830481094



WELCOME TO WEBSITE

INTERNSHIP

ITS

Website portal
mencari tempat magang
untuk mahasiswa/i ITS

Arek ITS

cak!
Cerdas, Amanah, Kreatif

INTERNSHIPS

2 Months – 3 Months – 6 Months – Certificate – with Recruitment

<https://careers.its.ac.id/internship/>

ITS Entrepreneurship Coaching (IEC)



Arek ITS!
Punya bisnis mandiri?
Atau PMW / PKM-K didanai?

ITS Entrepreneur Coaching

Program Pembinaan Entrepreneur Muda ITS yang Diselenggarakan
Pusat Pengembangan Karir dan Kewirausahaan Mahasiswa (P2K)

📅 Jumat, 24 Februari 2017
🕒 Pukul 15:30 s.d. 17:00 WIB
📍 SAC ITS

Registrasi dengan format
nama_jurusan_nama_bisnis
Kirim ke: 0812.8171.5569
(Whatsapp / Line)



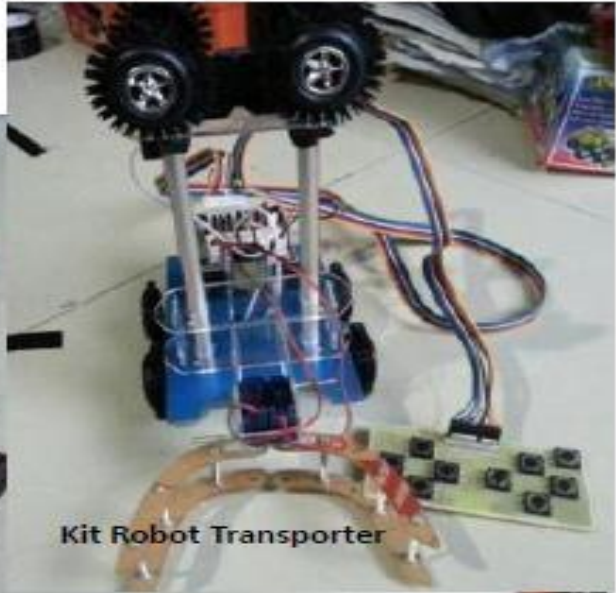
Technopreneur Product from Students

KIT ROBOT

**BEST PRODUCT!!
KIT ROBOT LINE TRACER STANDAR
TELAH TERJUAL 78 KIT**



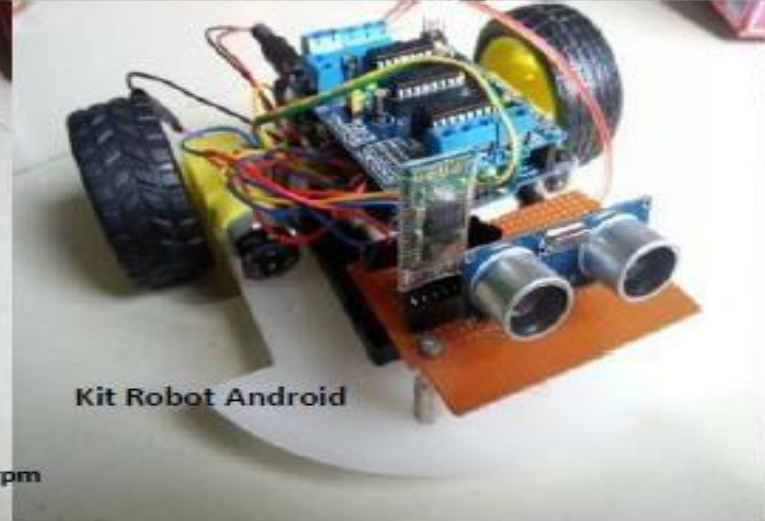
Kit Robot Line Tracer Standart



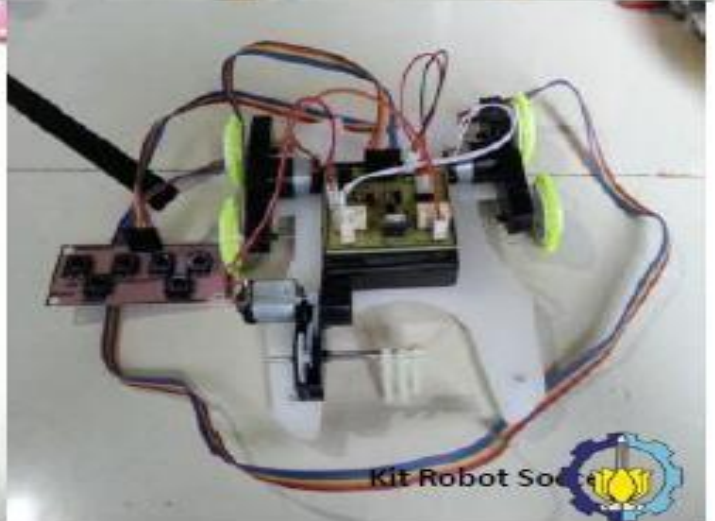
Kit Robot Transporter



Kit Robot Line Tracer Super Turbo 6 Relay 1000 rpm



Kit Robot Android



Kit Robot Soccer



Psychology Test

Intelligence Reliability - Creativity



Student PERSONAL DEVELOPMENT CARE Program



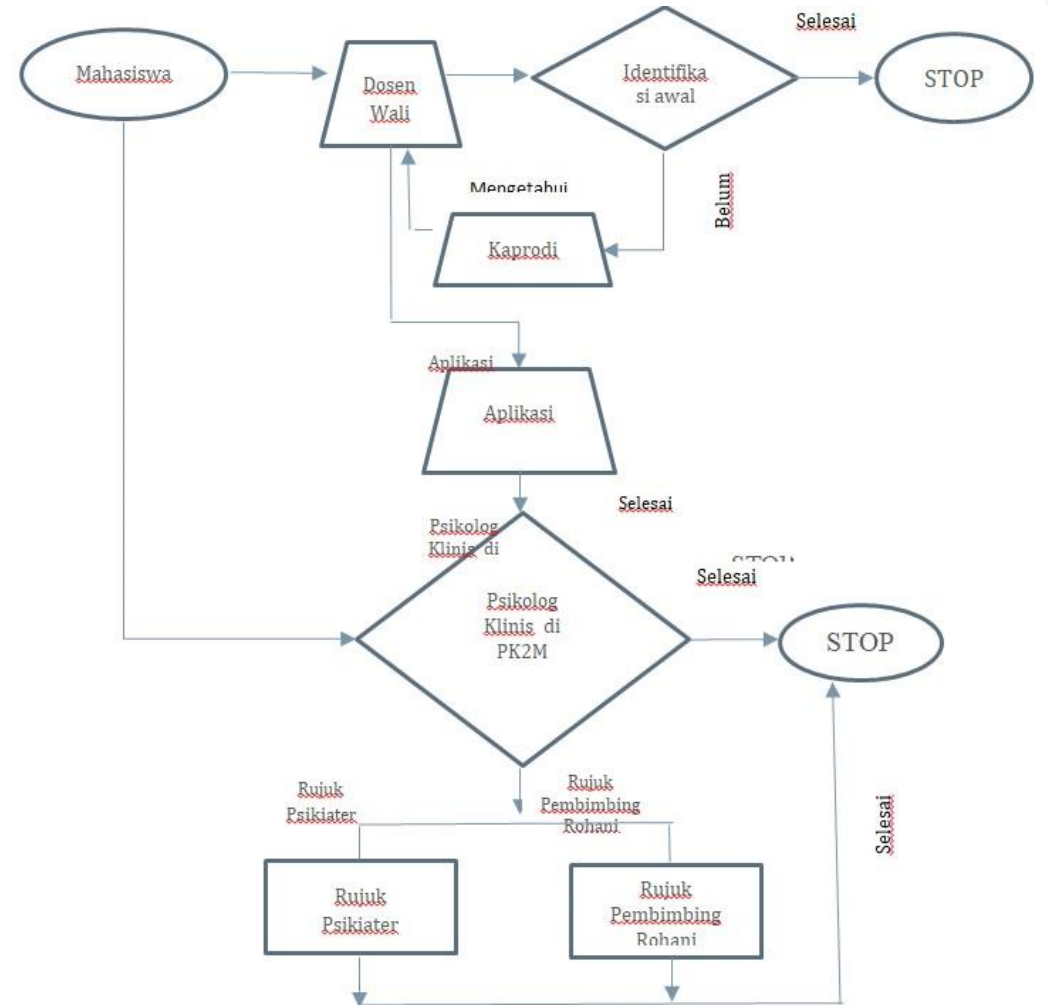
COUNSELING Room



PSYCHOLOG& PSYCHIATER



Sistem Informasi Rujukan Dosen Wali



Student PERSONAL DEVELOPMENT CARE Program: Training for Student Supervisors



1. Positive RESULTS (2018) of ITS: “MORE PARTNERS & GRANTS”



Scholarships:

- ❑ **35 National & Multinational Companies** provide **Scholarships** for **3872 students** of ITS
= **Rp7.000.000.000 /year** or **US\$496,000/year**

Internships & Campus Recruitments:

- **243 Companies /year** (173 Campus Hiring + 70 Careerfest)
- **From 2,187 vacancies offered** go to **1640 ITS alumni (75%)**
- **Internship BUMN 2018: 69 Students at 16 BUMN** (State-owned Enterprises)

2 Positive RESULTS of ITS (Tracer Study Survey 2019):

“HAPPIER STUDENTS”



*Respondents = 3,648 of 4,476 students of ITS (81,5%)
who were registered in 2013 and graduated 2017 & 2018
from 37 Department (D3, D4, Bachelor, & Master programs)*

- 85% alumni get jobs before 6 months** after graduation, 15% alumni need more than 6 months
- 81% Students** can finish their study on time
- 40% Student can get Jobs BEFORE Gradute,**
60% After Graduation
- Average time to get first job: 2,6 Month (78 day)** after graduation (Increase 0,6 month or 18 day quicker to get jobs from previous year)
- First Salary is Rp5,477,455** in average (increasing about Rp200.000 from last year survey)

3. Positive RESULTS of ITS: “HAPPIER INDUSTRY PARTNERS”

*Survey Respondents = 59 National & Multinational
Companies that hire ITS Alumni*

- ❑ **92.6%** companies **SATISFIED** with ITS Students who Join with INTERNSHIP Programs
- ❑ **93.5%** companies **SATISFIED** with ITS Students **Hard Skills** (*GPA, Working Skills, Certification, Language, Computer & Internet Skills, Knowledge related job*)
- ❑ **89.9%** companies **SATISFIED** with ITS Students **Soft Skills** (*Adaptation, Communication, Emotion, Ethics, Initiative, Work Independent, Motivation, Leadership, Responsible, Critical thinking, Learning, Persistent, Time Management, Team Work, Problem Solving, Negotiation, Tolerant, Loyal, & Integrity*)



Conclusion:

Don't Wait until Students Graduate!
Encourage & Facilitate Industry Partners
to Select & Invest on their “Employees” since in the TEACHING Process!



- Guest Lecture
- Manual Books
- White paper / Case Study Reports
- Workshop Tools

- Scholarship
- Project Grant

- Internship
- Final Project

- Campus Recruitment
- Career Fest

THANK YOU

