

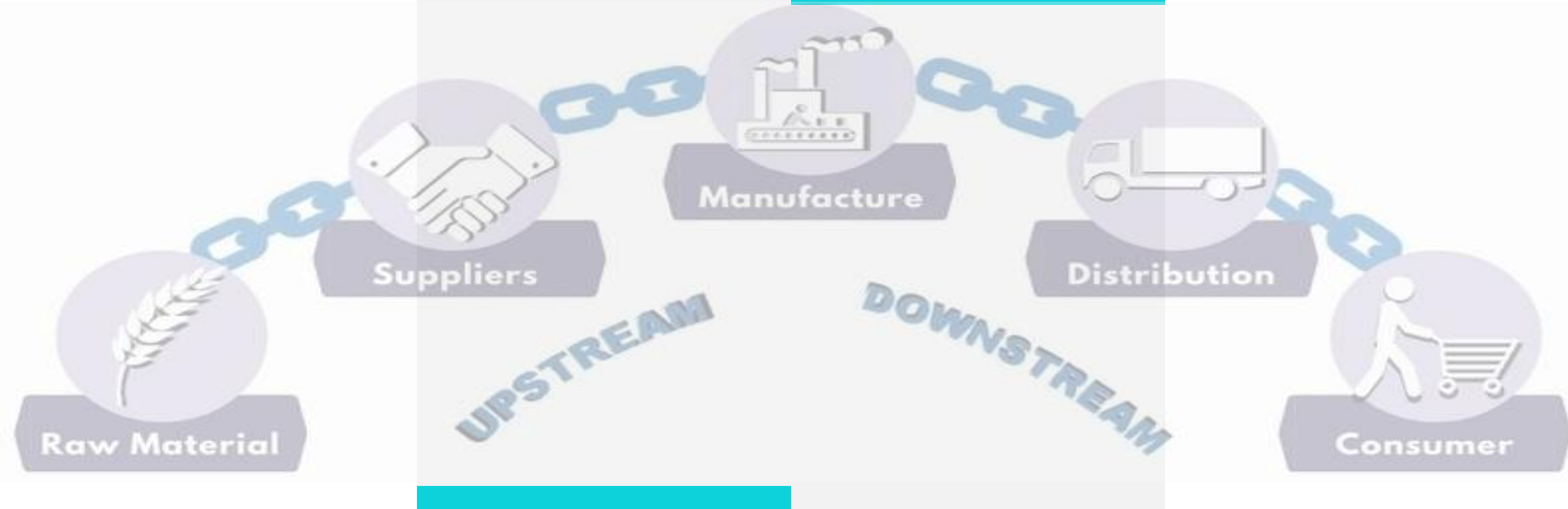


Fahmi Arif, PhD
Wakil Kepala LPPM Bidang Inovasi &
Pengelolaan Kekayaan Intelektual

LPPMitenas
Moving Towards an Excellent
Research & Innovation University!

Peran Teknologi dan Desain dalam Percepatan Hilirisasi Industri Nasional

hilirisasi?



strategi peningkatan **nilai tambah** dengan
memperpanjang **rantai nilai domestik**

Perluah Hilirisasi?

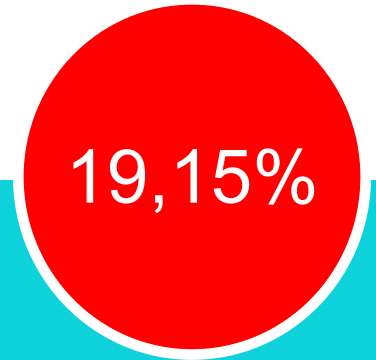
Bahan mentah yang
diolah di dalam negeri



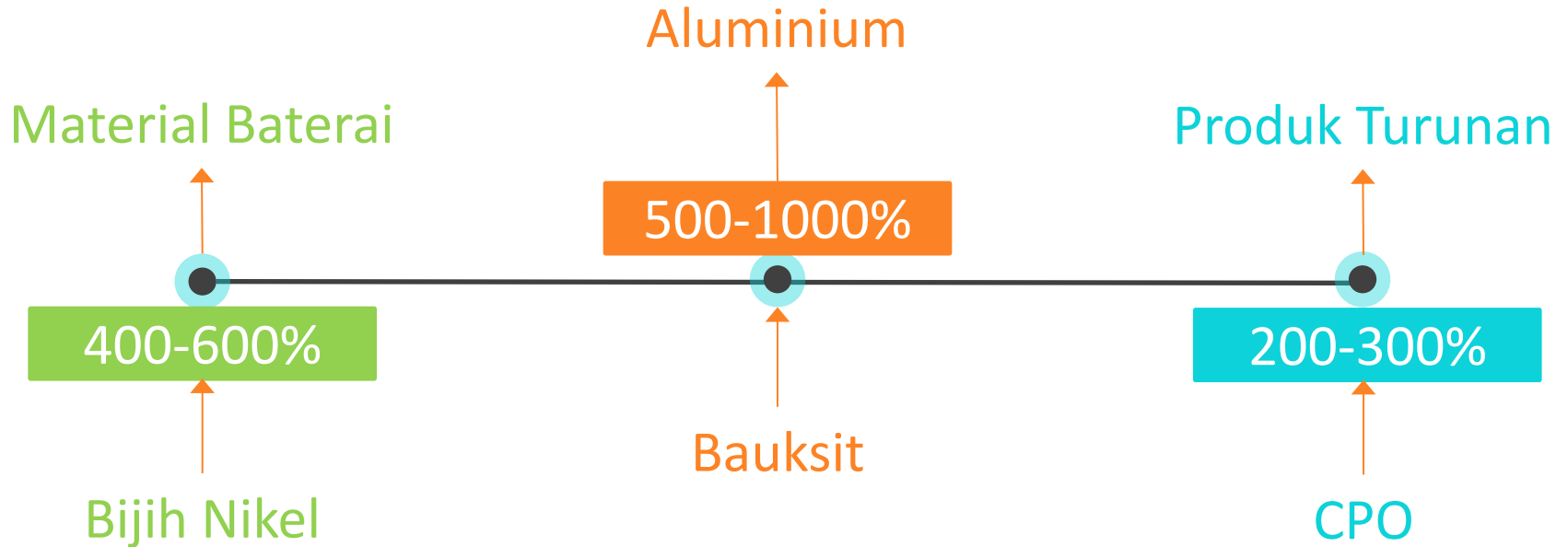
Nilai ekspor
bahan mentah



Kontribusi
sektor industri pengolahan
terhadap PDB

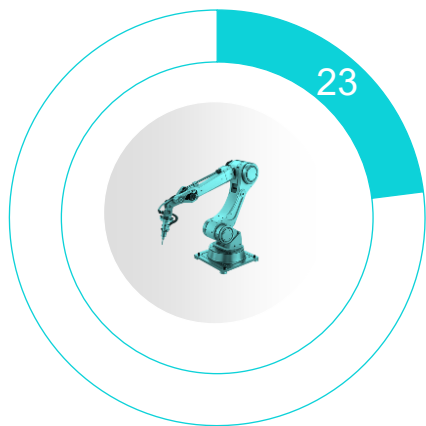


Nilai Tambah

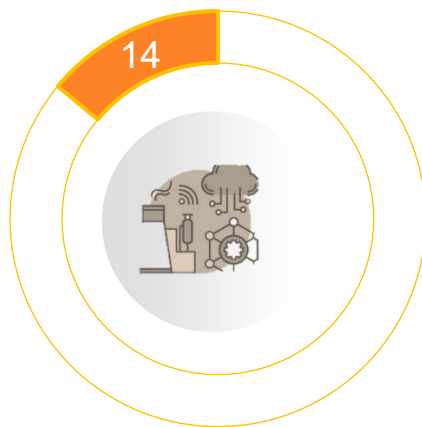


HILIRISASI → PERTAMBAHAN NILAI

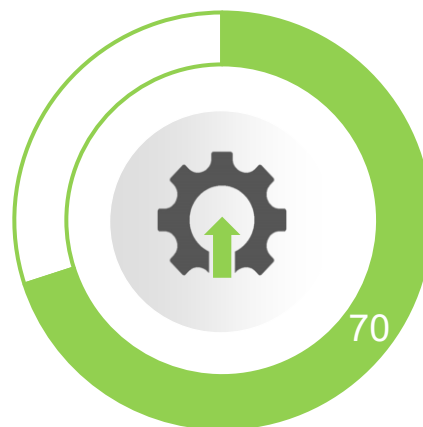
Bottleneck 1: Kesenjangan Teknologi



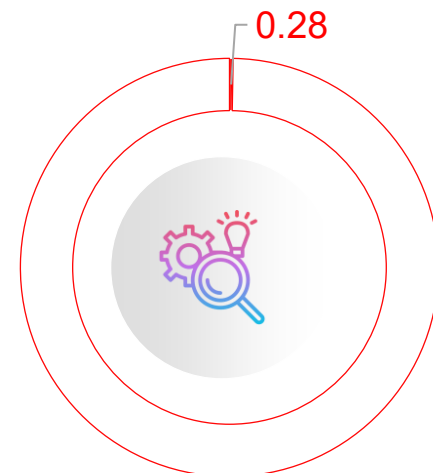
tingkat adopsi
otomasi



adopsi IoT
industri



industri dengan
tingkat kesiapan
digital rendah



belanja R&D
nasional
terhadap PDB

Bottleneck 2

60% pabrik
mengalami downtime
tak terencana

Scrap & rework
8 – 15 %

Adopsi predictive
maintenance: 18%

Kapabilitas Rekayasa

Desain & Kesiapan Pasar

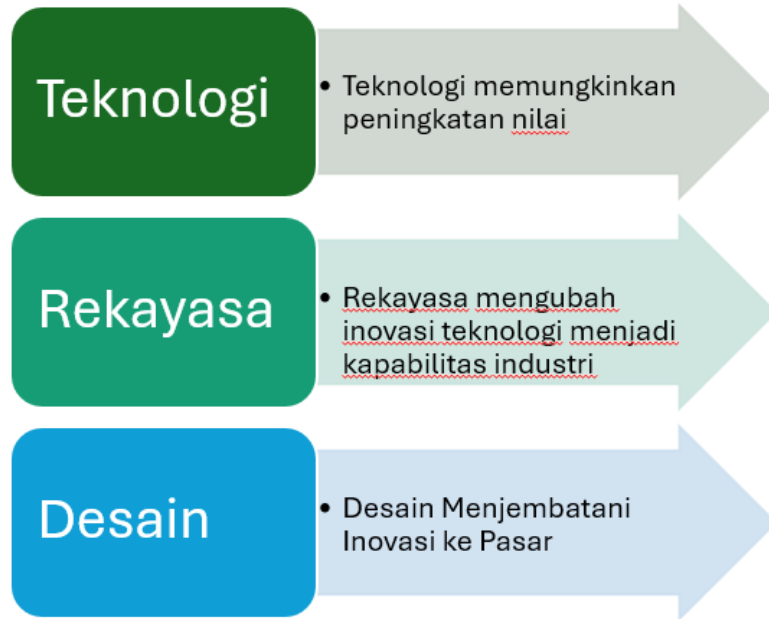
70-95% prototipe / produk baru tidak pernah
dikomersialisasikan

> 10% inovasi kampus masuk ke pasar

Design-for-manufacturability yang buruk meningkatkan
biaya 20-40%

Bottleneck 3

Akselerator



Teknologi Sebagai Akselerator

- Digitalisasi meningkatkan produktivitas 15—40%
- IIoT menurunkan downtime 20—35%
- Otomasi meningkatkan throughput 20—60%



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2013 International Conference on Electronic Engineering and Computer Science

**Cascade Quality Prediction Method Using Multiple PCA+ID3
for Multi-Stage Manufacturing System**

Fahmi Arif^{a*}, Nanna Suryana^a, Burairah Hussin^a

QUALITY INNOVATION PROSPERITY / KVALITA INOVÁCIA PROSPERITA 27/3 – 2023 109

**Data Mining for Quality Prediction in Software-as-A-Service
Concept: A Case Study in Offset Printing Company**

DOI: 10.12776/QIP.V27I3.1933

Fahmi Arif, Fadillah Ramadhan, Wildan Sayf

Rekayasa Sebagai Akselerator

- Rekayasa proses menurunkan biaya 10—30%
- *Lean manufacturing* meningkatkan efisiensi 20—50%
- *Predictive maintenance* menurunkan *downtime* 30—45%

Improvement of Decision Making Grid Model for Maintenance Management in Small and Medium Industries

Zulkifli Tahir¹, M. A. Burhanuddin¹, A.R. Ahmad², Sami M. Halawani², Fahmi Arif¹

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<https://doi.org/10.7232/iems.2023.22.4.389>
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Enhancing Cascade Quality Prediction Method in Handling Imbalanced Dataset Using Synthetic Minority Over-Sampling Technique

Fajar Azhari Julian
Department of Industrial Engineering, Institut Teknologi Nasional Bandung, Indonesia
Fahmi Arif*
Department of Industrial Engineering, Institut Teknologi Nasional Bandung, Indonesia

Desain Sebagai Akselerator

- Desain menjembatani inovasi ke pasar
- *User-centered-design* meningkatkan adopsi 50—70%
- *Design-for-manufacturability* meningkatkan *time-to-market* 30—45%

1788

JOURNAL OF COMPUTERS, VOL. 8, NO. 7, JULY 2013

The Extent of ERP Customization towards User Satisfaction in Daily Operation for Manufacturing Companies

Peningkatan Kapabilitas Hilirisasi



Investasi
teknologi
lanjutan

Penguatan
talenta
rekayasa

Integrasi
desain

Percepatan
komersialisasi
riset

Kolaborasi
N-Helix

Hilirisasi = Transformasi Teknologi

Indonesia memiliki banyak peluang – saatnya membangun kapabilitas!



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