Preparing a Generation of Lifelong Learners

Andy Bell

Director of Innovation

National Instruments

OPERATIONS IN
50+ COUNTRIES

$1.36
BILLION
IN 2018

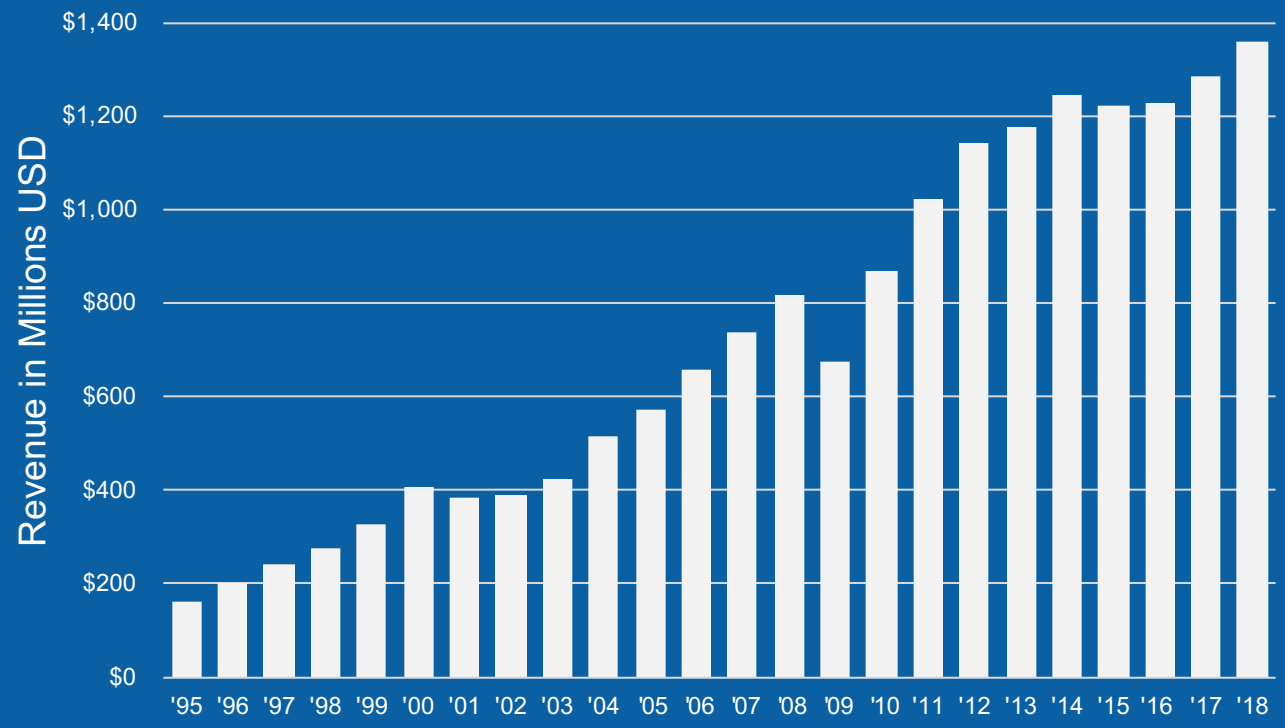
35,000+
CUSTOMERS WORLDWIDE

18%
INVESTMENT IN R&D

NATIONAL INSTRUMENTS™

MISSION STATEMENT

NI equips engineers and scientists with systems that accelerate productivity, innovation, and discovery.



Our Engineering World Is Rapidly Changing

INCREASING COMPLEXITY

COMPRESSED DEVELOPMENT TIMES

SMALLER TEAMS

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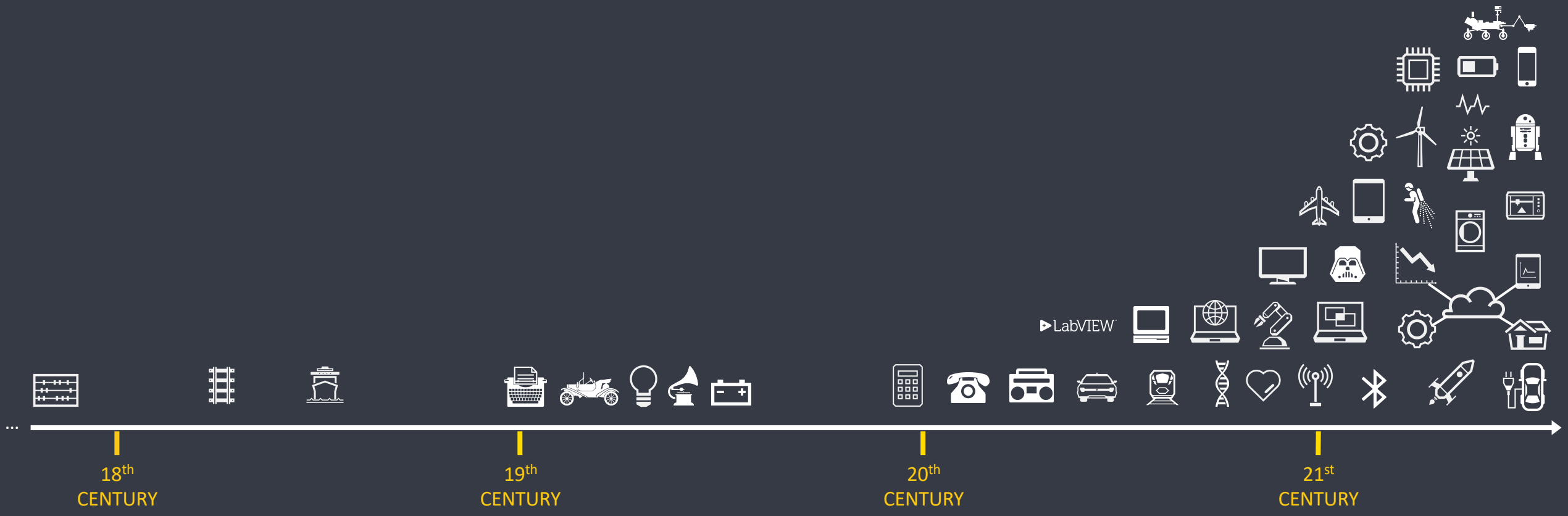
Era of Great Technology Acceleration



Big Physics

Clean Energy

5G

IOT

Driverless Cars

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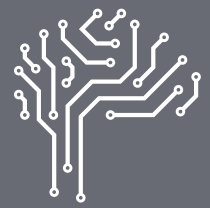
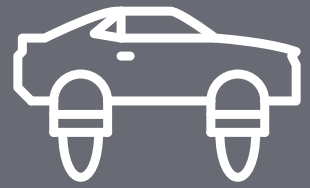
Self-Driving
48
mph
100m

Sensing Technology

Communications Standards



Artificial Intelligence

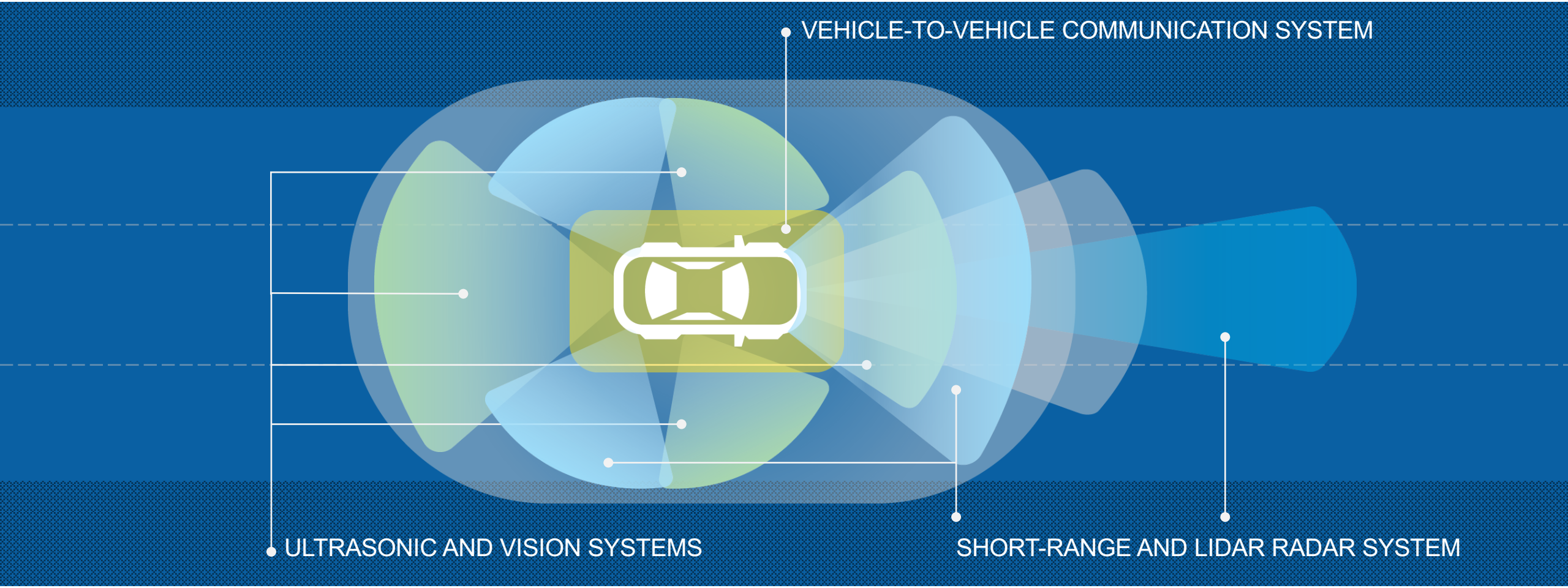


Advanced Control Systems

Power Electronics

Engineering System Design

Autonomous Vehicle



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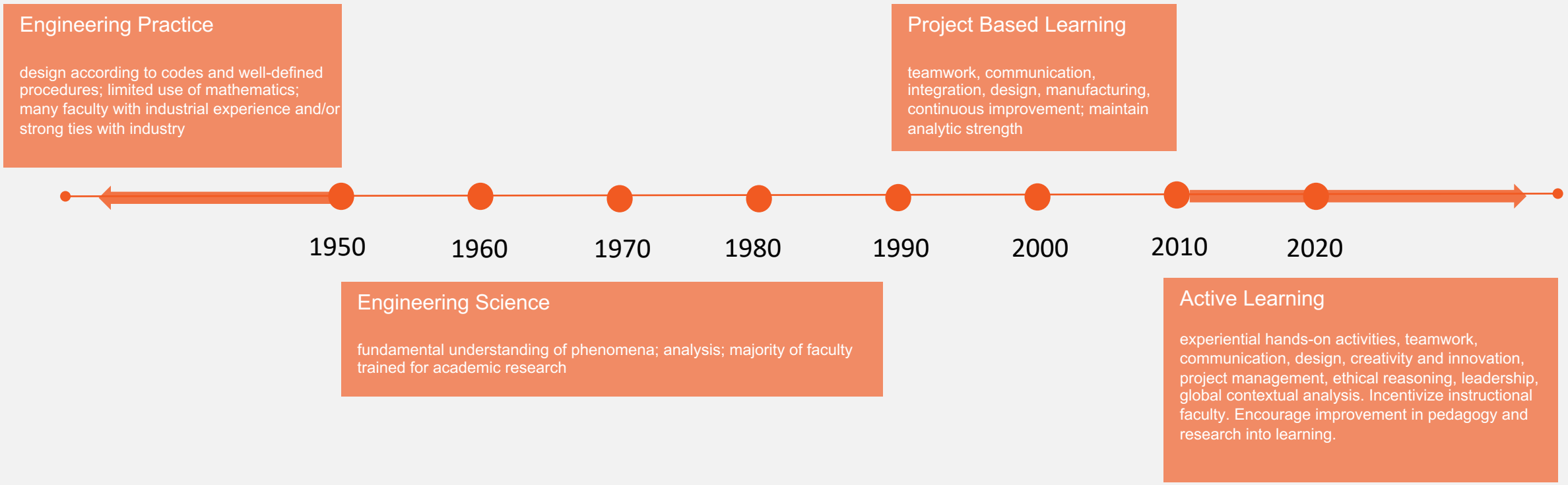
Engineering Education Paradigms

National Academy of Sciences



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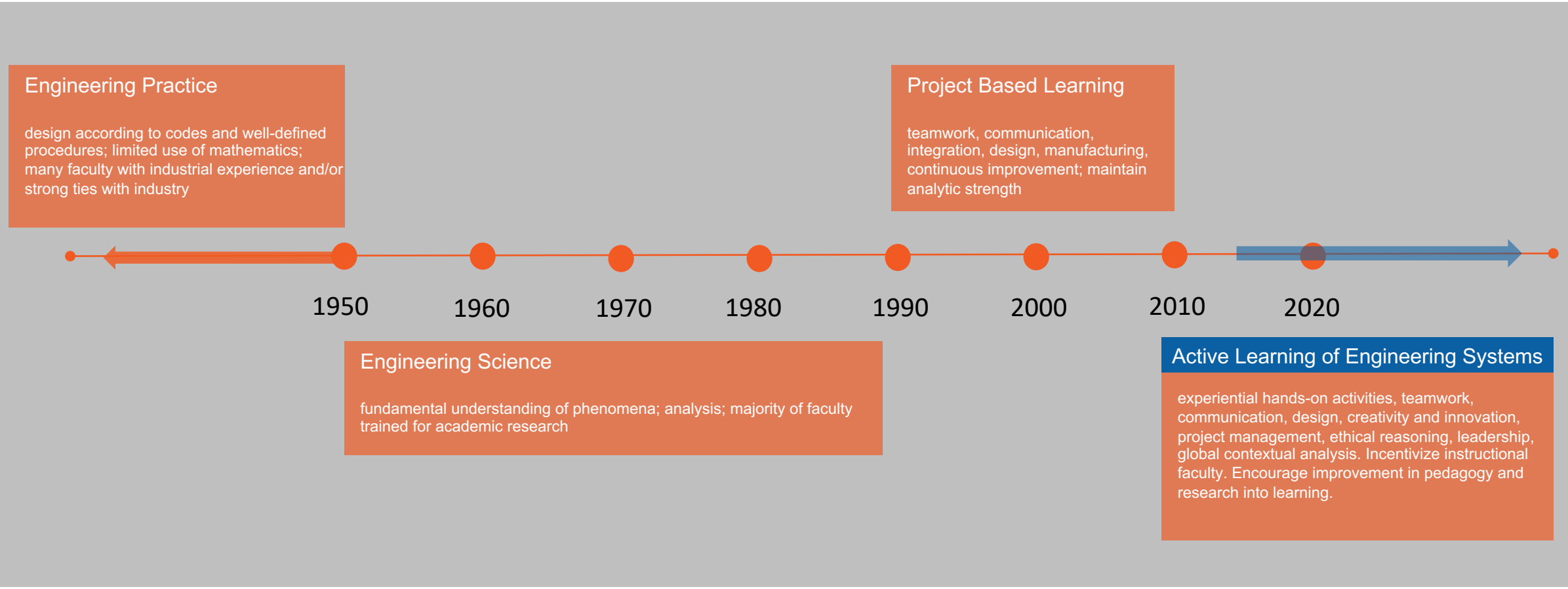
Engineering System Design

Evolving the Paradigm Shift to Change Engineering Education



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Skills that Companies Need for Graduating Students

- Good Communication Skills
- **Understanding of Engineering Fundamentals**
- Ability to Problem Solve
- **Critical Thinking**
- Ability to Prioritize
- **Teamwork Skills & Ability to Function in Multidisciplinary Teams**
- **Ability to Apply Engineering Knowledge**
- Data Interpretation and Visualization
- Leadership
- Creativity
- Systems Thinking
- Flexibility and Ability to Adapt
- Innovation
- Understanding of Design
- **Ability to Deal with Complex Problems**

Teach Students to Innovate

Students need to learn teamwork while solving complex, multidisciplinary problems

Transforming Undergraduate Education in Engineering by ASEE

Engage and retain students by building experiences with real engineering design problems.

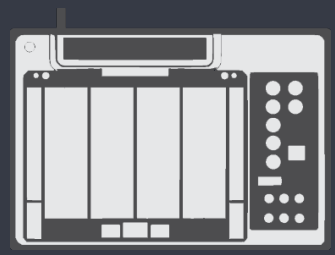
Educating the Engineer of 2020
National Academy of Engineering

Students must work on multidisciplinary teams using modern engineering tools

Criteria for Accrediting Engineering Programs
Washington Accord (of Accreditation)

Bloom Theory of Learning

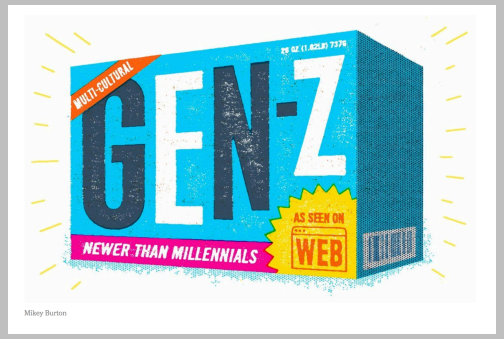
Traditional lab solutions



Modern Teaching Laboratory Solutions

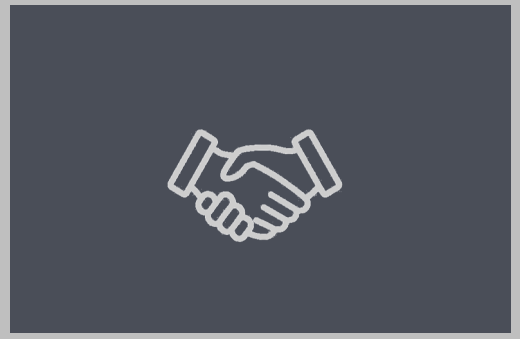
Build a Systems Approach into Foundational Areas

Adapt Teaching Approach to the Generation



Drive Innovation with Interdisciplinary Teamwork

Build Academic and Industry Partners with Impactful Stakeholders



Focus on PBL to Meet Educational & Industry Ready Outcomes