2020 President-Elect Nominee Statement Region 10

Milojicic Dejan, Ph.D., IEEE Fellow

(2018-19) 2015-17, IEEE Industry Engagement Committee (Past) Chair
2018 IEEE Audit Committee Chair
2017-2018 Division VIII Director
2014 IEEE Computer Society President

2 March 2019
Melbourne, Australia

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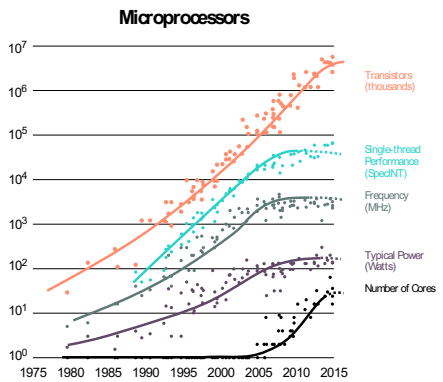
Dejan's Visits (X) to Region Teams Managed (X) Cloud Computing Testbed Sites (X)

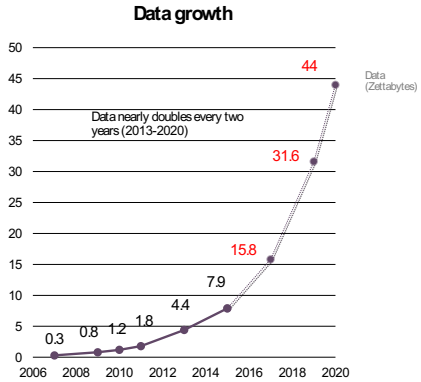
TECHNOLOGY INFLECTION POINT:

Many changes, and this is the time to make a lasting impact

Technology

End of Moore's Law and Data Growth





- Power AI: explosion of HW accelerators
- Automotive: self-driving cars: Tesla, Baidu, Audi
- Quantum Computing, Blockchain, AR/VR
- Technology convergence: SW-defined, hpc/data

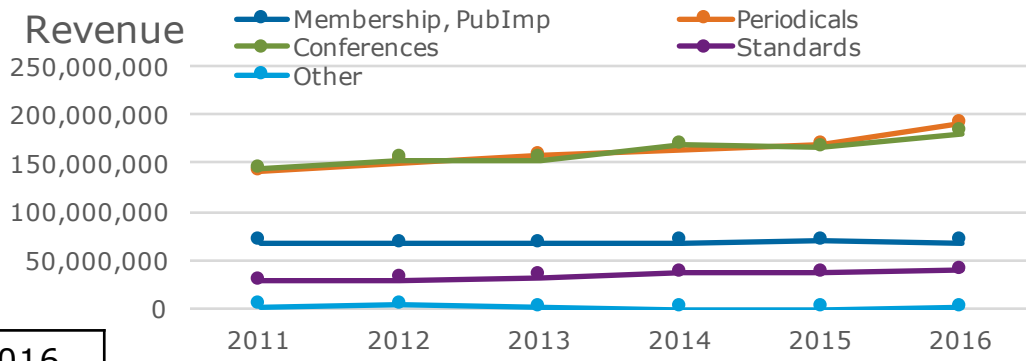
Global Challenges

- Concerns of supply chain hack
- Spectre and Meltdown vulnerabilities
- Race to Exascale: China, Europe, US
- Sustainability issues: global warming
- Global hunger: solution through supply chain?
- Talent training, recruiting, evolving

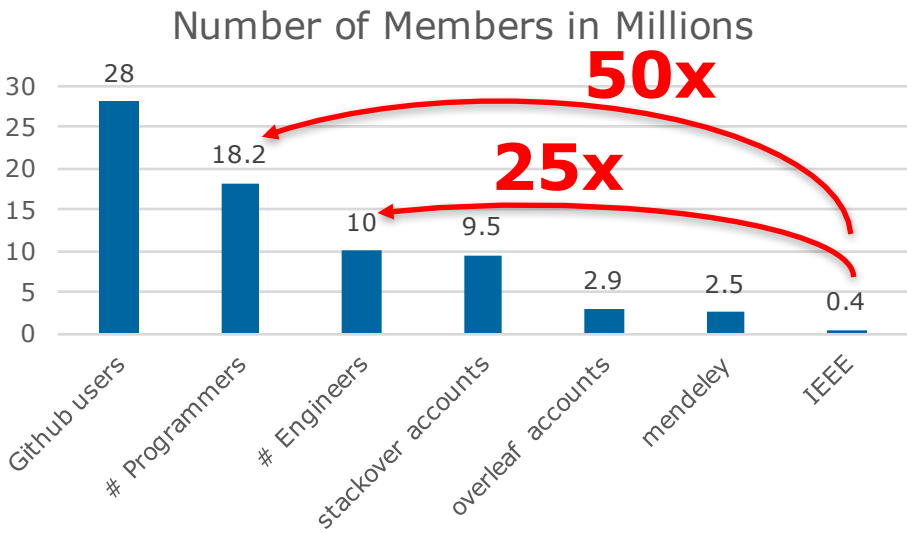
IEEE is at the heart of the technology revolution, with impact on humanity

However, IEEE is not acting with the same sense of urgency as industry is!

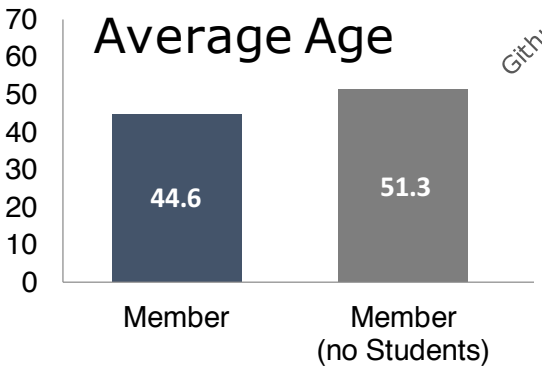
IEEE Today



Survey of Membership	2000	2004	2008	2012	2016
Private industry	60%	54%	52%	44%	39%
Educational Institutions	14%	17%	18%	24%	29%



Fellow Elevation Type ('07-'17)	%
Researcher/ Scientist	80.8
Technical Leader	10.4
App. Engineer/ Practitioner	5.9
Educator	2.9

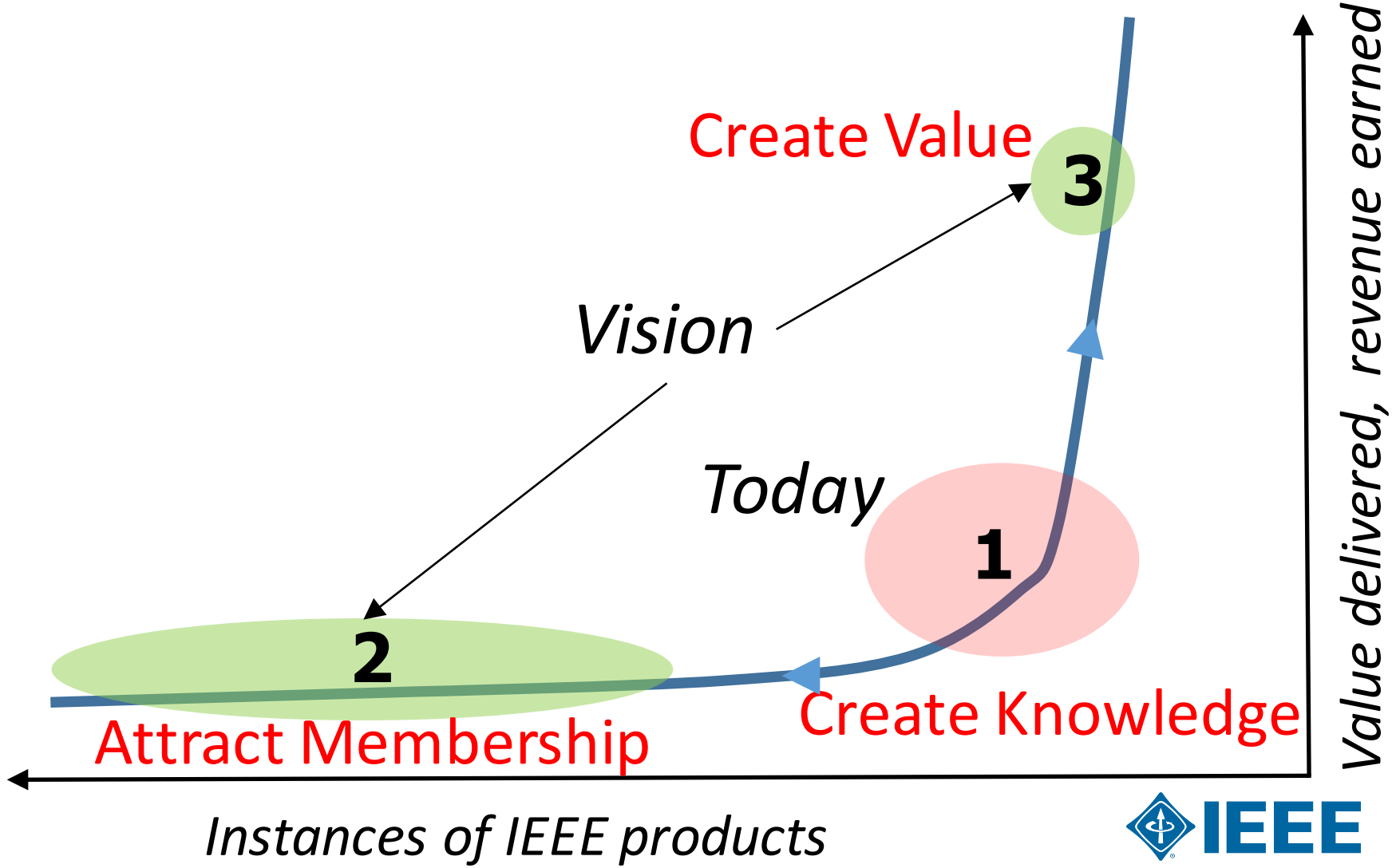


2017 Rank	Country	2017	2007	% Change
1	USA	180,952	212,838	-14.98%
2	India	52,410	23,496	123.06%
3	China	18,919	4,897	286.34%

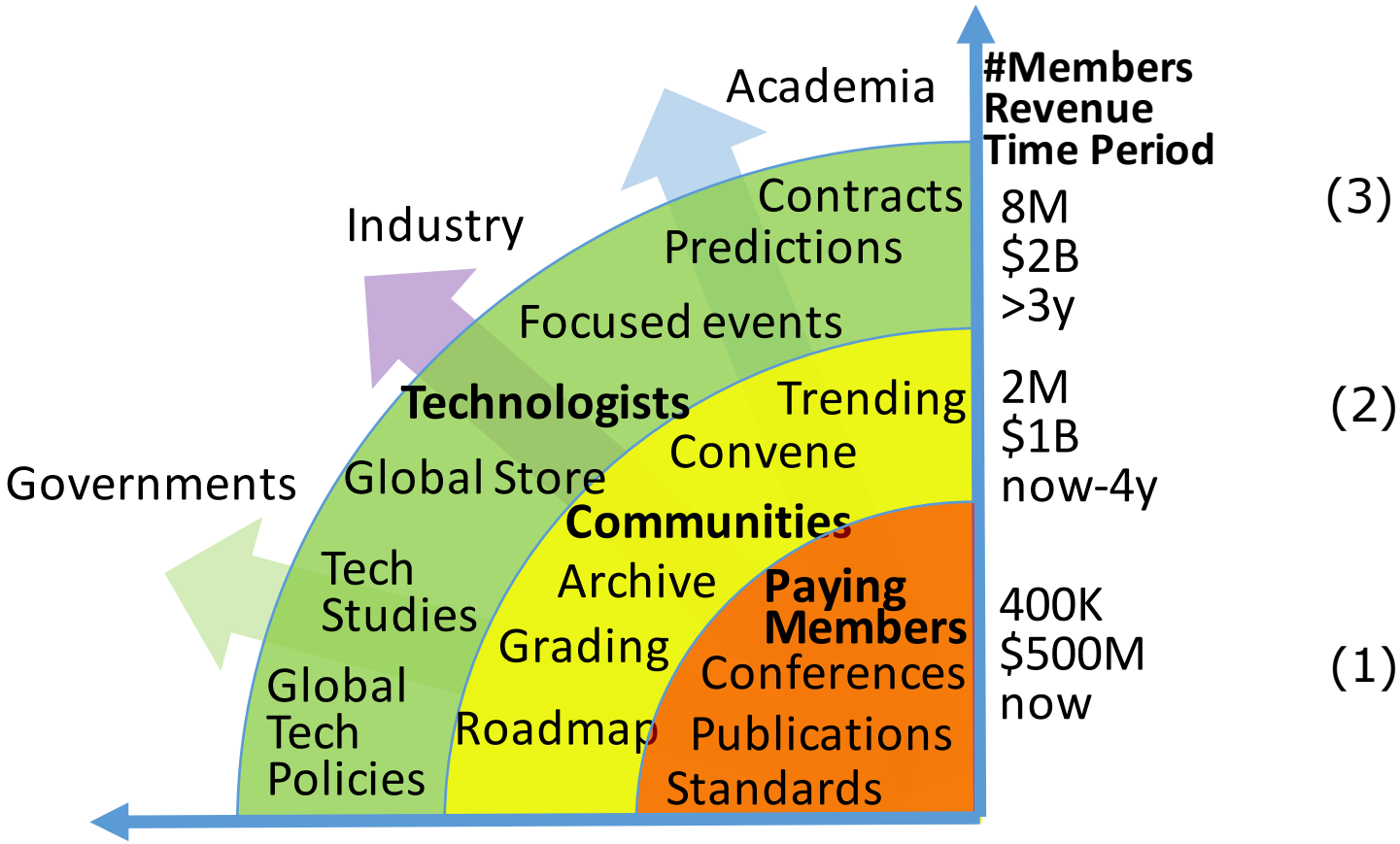
STATEMENT: IEEE has not kept pace with the changing profession. It must adjust or gradually diminish in relevance!

- Relevance to industry, and tie better to academia and government, e.g.:
  - Consulting services to corporate, government, e.g. cross-technology evaluation
  - Practitioner reports and trend papers of timely, practical value
  - Host modern events targeted to industry, culminating in Industry Congress
- Innovate IEEE by introducing offerings, e.g.:
  - Recruit members from 18M SW developers, talent mgmt., new member grades
  - Tighter workflow connecting TAB and SA for right-timing of agile standards
  - Corporate Partnerships with SMBs and startups, in addition to enterprises
- Global Membership, expand into Asia/Africa, strengthen Americas/Europe:
  - Grow IEEE-USA into IEEE-Global-Policy, extend with IEEE-Asia, IEEE-Europe
  - Collaborate with sister organizations, such as NAE, AAAI, ACM, ASM

VISION: 1) Protect, preserve the core (membership)
2) Transition to long-tail (by engagement)
3) Incubate high-end services (by association)



MEMBERSHIP VISION



IEEE VISION: IEEE, a preferred technology advisor to corporations, governments, NGOs

- IEEE should connect all those we serve to our global technical community
- This means delivering high value, high margin services, e.g.

  IEEE advising the UN on application of AI to automotive using neuromorphic computing with ethical constraints

- To reach this vision requires three phases

1. TRADITIONAL: Our credibility relies on us preserving our core products which are converging: journals and conferences, standards and publications, etc.
2. BY ENGAGEMENT: converged products to the long tail (tools, e.g. HotCRP, ShareLatex, Mendeley-like developer networks, certified citations, etc.)
   - Delivering standardized/unified products to the long-tail requires automated customization at low price, low touch, and at large scale.
3. BY ASSOCIATION: High margin services require new skills, partners, high touch, markets; this will take effort, but it will position IEEE to reach its full potential
   - Realizing an ambitious new vision is a multi-year process and requires members and staff to share that vision

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Innovation in Standards

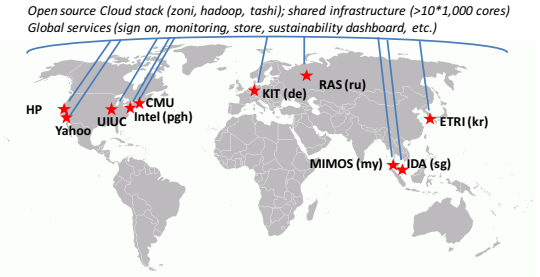
- New opportunities from new standards growing countries (China, India)
  - High speed trains, UAVs (drones), SmartGrid
  - Unchartered territory with AI chips, huge impliations on AR/VR
- New technologies demand reverse cycle of technology->standards
  - Standards-driven Technical Communities created from standards activities
  - AI, post-Moore's, ethics considerations, require broader, innovative standards
  - Pre-standardization activities: roadmapping, white papers, rapid reaction, etc.
  - Light consensus building: open source, industry consortia, SW interoperability
- Perpetual adaptation of processes, people, and locations
  - Increased presence in technology-savvy regions: Silicon Valley, Chicago, Boston
  - Industry connections lead to practitioner membership and executive buy-in
  - Need critical mass: cross-IEEE coordination and synergy

WHO AM I? A catalyst of change, a technical leader in system software

- Distinguished Technologist at Hewlett Packard Labs
  - '98-now at HP(E) Labs working on systems software
  - '94-'98 at OSF Research Institute, Cambridge MA
  - '91-'94 PhD at University of Kaiserslautern, Germany
  - '83-'91 Institute "Mihajlo Pupin", Belgrade, Serbia

- Working at the birthplace of Silicon Valley
  - Regularly presents to CTO of HPE customers
  - Exposed to dynamic industry, startups, VCs

- Innovator
  - 31 patents, 126 patent app, 2 books, >180 papers, 6891 citations, h-i:35, i10:87
  - Fellow of IEEE (2010), ACM Distinguished Engineer



- Global reach, extensive management experience
  - Managed teams in India, Brazil, Singapore, China, US
  - Works with UIUC, Purdue, GaTech, ETH, Technion, etc.
  - Managed OpenCirrus Cloud Computing Testbed with 16 sites around the world
- Strong support of HPE CTO and Lab VP

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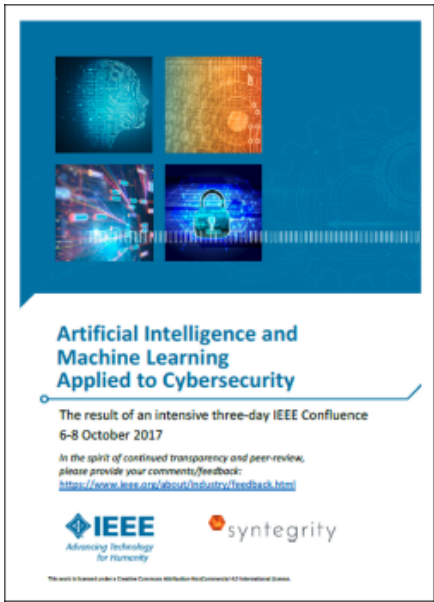
What Have I Accomplished in IEEE?

- (Past) Chair of Industry Engagement (2018-19) 2015-17
  - Portfolio: Industry Advisory Board, Infrastructure Conference, Confluence of AI & Cybersecurity, Industry Summit, etc.
  - Formed IEEE Industry Engagement Committee
  - Worked closely with all VPs, Volunteers, Mgmt Council, Staff
  - Working towards Industry Congress
- Audit Committee Chair, 2018
  - Oversaw Global Spec; Harmonized Committee with MOUs
- Computer Society President
  - Reduced financial deficit by 37%, new revenue sources
  - Introduced prestigious "Spirit of Computer Society" Award
  - IEEE CS 2022 Report, Tech Trends, Computing Now, Special Technical Communities; started 3 conferences
  - on Magazine/Transactions boards, 2 conferences PC chair



Summary

- Additional President's Responsibilities
  - Align membership and drive organization behind ambitious vision and compelling goals
  - A role model: strong technically, skilled organizationally, and driven by business needs
  - Inclusive in execution, work exceptionally well with all Volunteers and Staff

- As an innovator from industry with strong ties to academia and government, with a global history, I have a proven track record as a catalyst of change

- It is time for an IEEE President with a strong technology background, who works for a technology company and understands what technologists want

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Thank you!

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