

Agenda

- ▶ Foundations of Leadership
- ▶ A Brief Environmental Scan
- ▶ Changed Human Dimension
- ▶ Characteristics for Success
- ▶ Implications for Tomorrow's Leaders
- ▶ The Role of IEEE

To lead people, walk beside them ...
As for the best leaders, the people do not notice their existence.
The next best, the people honor and praise.
The next, the people fear;
and the next, the people hate ...
When the best leader's work is done the people say,
"We did it ourselves!"

— Lao-tsu

Foundations of Leadership

Good leaders are made not born. If you have the desire and willpower, you can become an effective leader. Good leaders develop through a continuous process of **self-study, education, training, experience, and reflection.**

Leadership is a process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent.

Although your position may give you the authority to accomplish certain tasks and objectives in your organization, power or authority does not make you a leader ... it simply makes you the boss.

Leadership differs in that it makes the followers want to achieve high goals, rather than simply bossing people around.

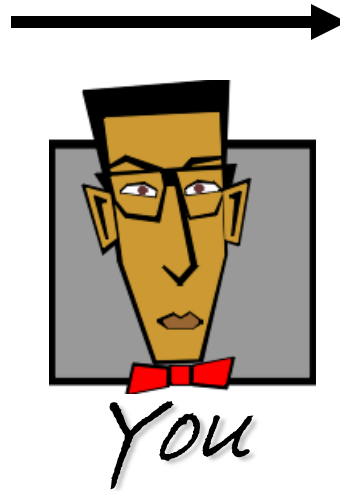
Do you wish to rise? Begin by descending. You plan a tower that will pierce the clouds? Lay first the foundation of humility.

— St. Augustine

Leadership Development

+ New Knowledge

- Reading about leadership
- Observing other leaders
- Studying leadership theory



+ Experiences

- Leading other people
- Serving under others
- Peer leadership
- Individual challenges

+ Reflection

- Self awareness
- Taking **ownership** of your development
- Mentoring, counseling, feedback
- After Action Reviews

IEEE E-Book

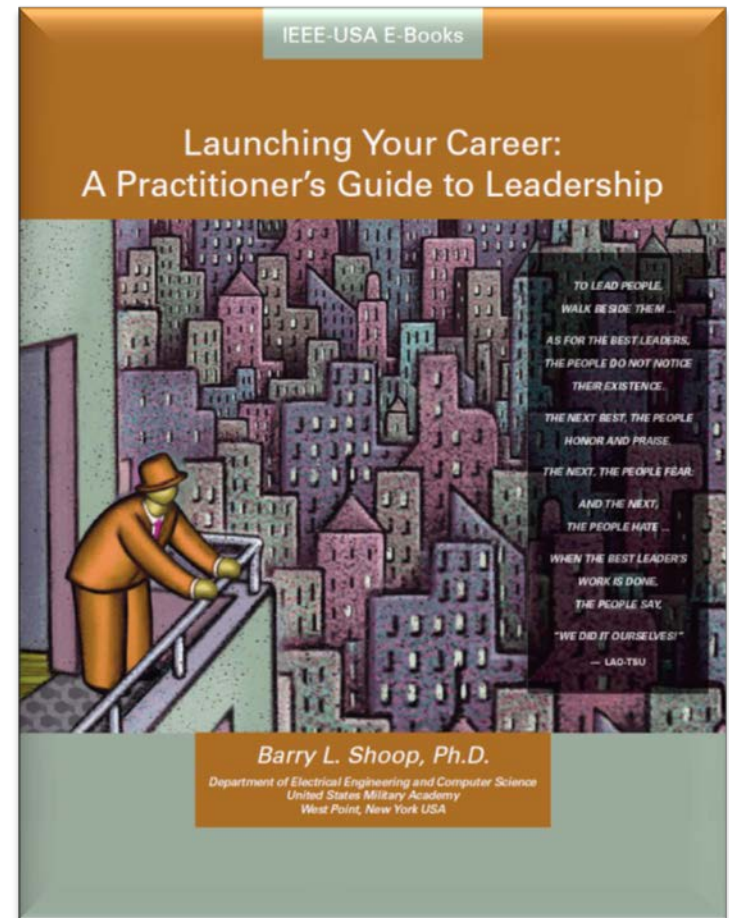
Access this e-Book at:

<http://www.ewh.ieee.org/reg/1/Leadership09.pdf>

There is also an IEEE Expert Now course entitled:

An Introduction to Leadership: A Primer for the Practitioner

Most accessed module in the IEEE Center for Leadership Excellence (CLE) Learning Library.



Our chief want is someone who will inspire us to be what we know we could be.

— Ralph Waldo Emerson

Demographics



World population to reach 8.4 billion by 2030 with most growth in developing regions, especially Africa and South Asia

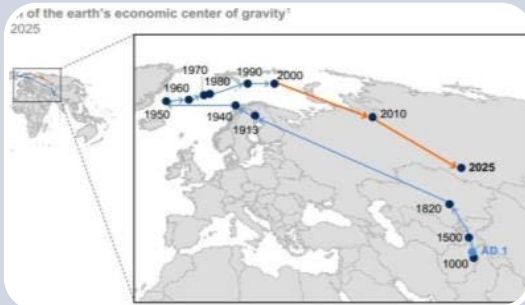


Increased mobility, changing migration patterns, increased life expectancy, aging societies, more **ethnic and cultural diversity**



More people will live in urban areas, 41 megacities by 2030, over 66% of the world's population living in cities by 2050

Global Economy



Definitive shift
of economic
power to the
east and south



Emerging
economies will
become more
important in the
global economy

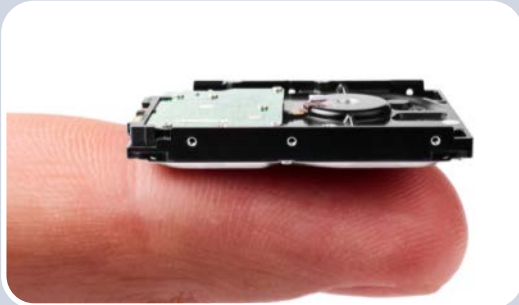


Global demand
for energy and
electricity
increases
dramatically by
2035

We must become the change we want to see.

— Mahatma Gandhi

Governments and Policies



Science and technology provide a path to global competitiveness



Economic growth will be positive for countries that foster **talent, innovation and entrepreneurship**



Increased regulatory and compliance costs and government scrutiny

Social and Consumer



Global middle-class will increase to 4.9 billion by 2030 while their influence swells

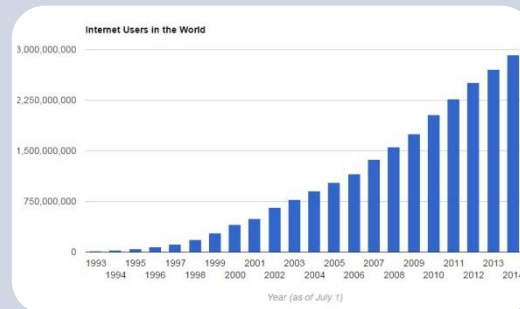
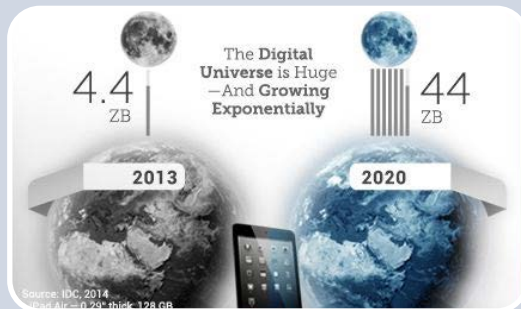


Rise of Generation C (connected, communicating, content-centric, computerized, community oriented, clicking, and change)



Tailored consumer content, and deepening personalization

Information Explosion and Access



Digital universe will grow by a factor of 10 between 2013 to 2020 and from there expected to at least double every two years

By 2030, more than half of the world's population will have Internet access

Information is power and cyberspace is the new frontline for security

Leadership is the art of getting someone else to do something you want done because he wants to do it.

— Dwight D. Eisenhower

Scientific and Technology Trends



Share of Total Global R&D Spending			
	2012	2013	2014
Americas (21)	34.5%	34.0%	33.9%
U.S.	32.0%	31.4%	31.1%
Asia (20)	37.0%	38.3%	39.1%
China	15.3%	16.5%	17.5%
Japan	10.5%	10.5%	10.2%
India	2.7%	2.7%	2.7%
Europe (34)	23.1%	22.4%	21.7%
Germany	6.1%	5.9%	5.7%
Rest of World (36)	5.4%	5.3%	5.3%

Source: Battelle, R&D Magazine

The Third Revolution: the convergence of life sciences, physical sciences and engineering

Globalization and competition are putting emphasis on regional clusters

R&D spending growth continues while globalization accelerates and global influence shifts

Leadership is a combination of strategy and character.
If you must be without one, be without the strategy.

— H. Norman Schwarzkopf

Tomorrow's Leaders



Leadership is about setting the conditions so others can succeed.

— Barry L. Shoop

Changed Human Dimension of Science and Technology



Complex problems need a multi-disciplinary approach, more multi-, cross- and inter-disciplinary work



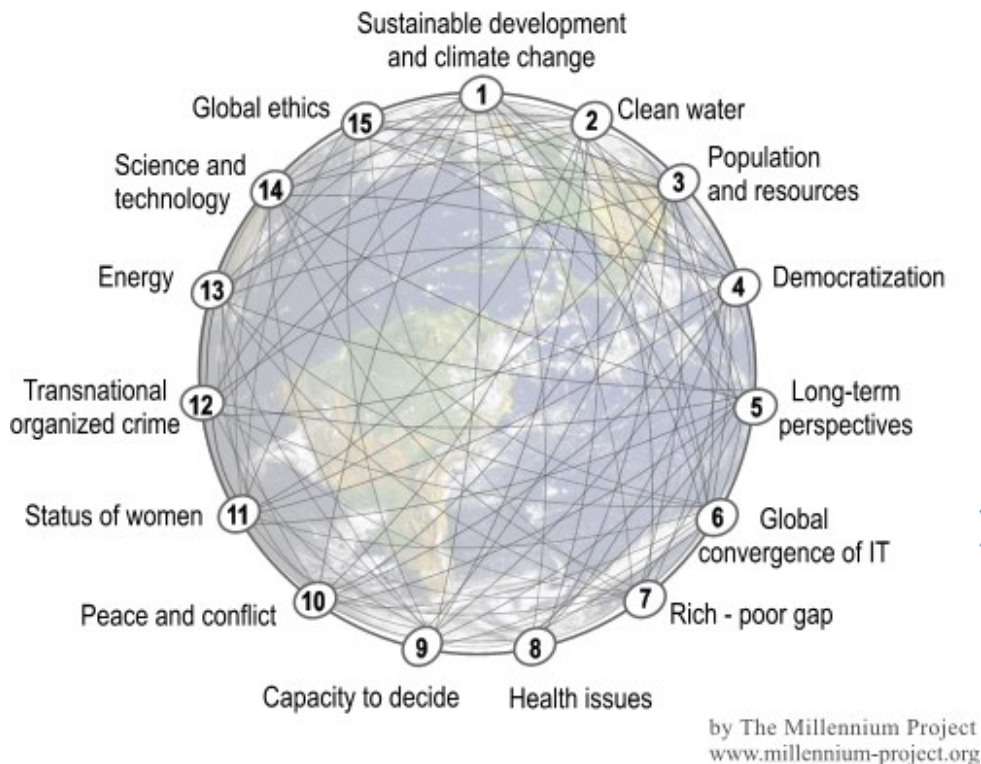
Growing mobile workforce, project teams spread across the globe, seeking flexible schedules and work-life balance



Collaboration involves coordination, relationships (networking) and consulting with colleagues

Engineering with a Conscience

15 Global Challenges facing humanity



- ▶ Growing resource pressures, energy, the environment to remain dominant issues for at least the near-term future
 - Climate change considered biggest risk to human health
 - Food and energy demand to increase by 50%+ by 2030
- ▶ Need for engineering leaders of conscience, focused on holistic approaches and comprehensive solutions, rather than stopgap measures

“T-Shaped” Individuals

- ▶ PricewaterhouseCoopers' 18th Annual Global CEO Survey: 81% of CEOs are looking for a much broader range of skills:
 - Those who can imagine and implement
 - All-rounders and deep specialists
 - Those who can lead cross-functional, cross-sector, cross-cultural initiatives
 - People who can adapt the way they think and work, as circumstances require



Lifelong Learning...

- ▶ Looking for adaptable talent pool that is willing to engage in continuous learning; will be a key factor in unlocking tens of billions of dollars' worth of additional productivity globally

"As part of the increased clock speed through new technologies, you have to keep your eyes continuously open and really try to learn something new every day."

Focused on Generation 'T', today's organizations "have to think differently about how we serve the young talent [and] what type of opportunities, networking and type of culture you need to develop as a company."

Kimmo Alkio, President & CEO, Tieto Oyj

... with the World as your Classroom

- ▶ Nearly $\frac{3}{4}$ of all business CEOs look globally across industries, demographic segments, and geography to secure the talent that's needed
 - By 2020, it's estimated that more than 50% of graduates ages 24-35 will come from emerging markets
- ▶ Mobility increasingly important; 9 out of 10 CEOs in the PwC survey plan on increasing the numbers of internationally mobile staff in coming years

Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.

— George Patton

Anticipatory and Collaborative

- ▶ Anticipate outside issues (policy, regulations, convergences of technologies, etc.) that can impact your field of interest
- ▶ Collaborate with fellow stakeholders (and policymakers) to develop mutually acceptable, balanced, comprehensive and effective policies, initiatives, and solutions
- ▶ Build diverse, aligned and, when possible, complementary partnerships that enhance your capabilities
 - Strengthen these collaborations by working toward mutually beneficial outcomes
- ▶ Know what you don't know about your profession and the things affecting it...and always be willing to learn

Master the (Soft) Art of Leadership

- ▶ CEOs stress the 'soft' skills of leadership for tomorrow's leaders:
 - Need for vision
 - Agility and flexibility in decision-making
 - Important to be curious about the business world, especially in the face of change and disruption
 - Need to master humility; humble leaders listen to and learn from the team they have built around them
 - Enables leaders to take maximum advantage of the diversity they cultivate and be more receptive to insights gained from new collaborations
 - Gives leaders the confidence to pass on the lessons they have learned to the next generation of leaders

A leader takes people where they want to go. A great leader takes people where they don't necessarily want to go, but ought to be.

– Rosalynn Carter

Immutable Lessons from Kindergarten ...

▶ **Share**

- Recognize the needs of others, and respond accordingly; builds trust

▶ **Slow and steady wins the race**

- Those who use persistence and humility will encounter more success as leaders

▶ **Don't run with scissors**

- Manage risk, organizationally and professionally

▶ **Apologize when wrong**

- Shows that you hold yourself to the same standards as those whom you lead

▶ **Use the buddy system**

- Concept of organizational leadership is evolving: flatter organizational charts, more inclusive leadership
 - Increasing emphasis on friends and mentors, decreasing emphasis on authority figures

▶ **Take a nap**

- Sleep deprivation can impact productivity, and impair the ability to engage in innovative thinking, strategic planning, and risk analysis

The Role of IEEE

Who We Are

More than 400,000 technologists in 160 countries driving technological innovation and excellence for the benefit of humanity.

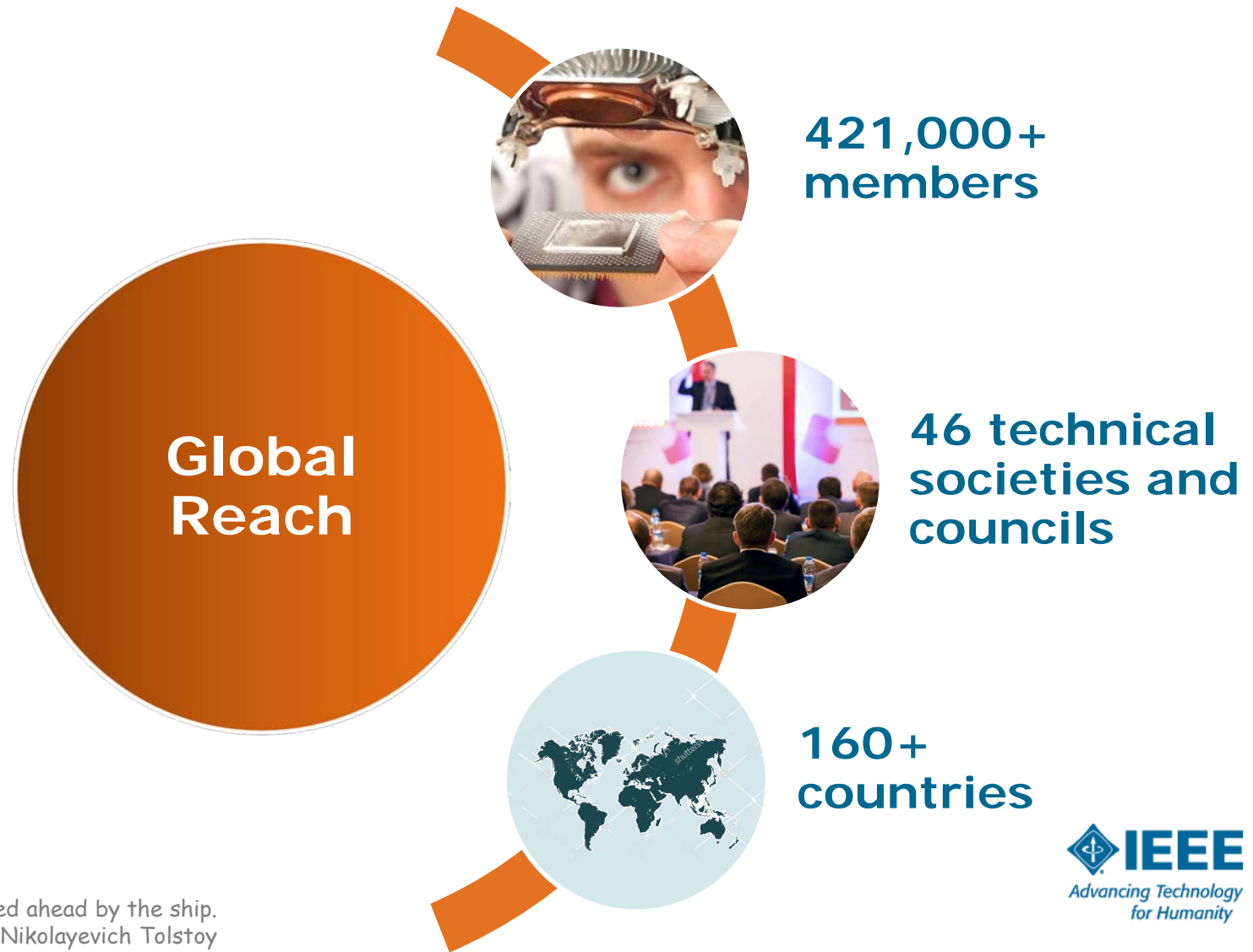


Our Vision:

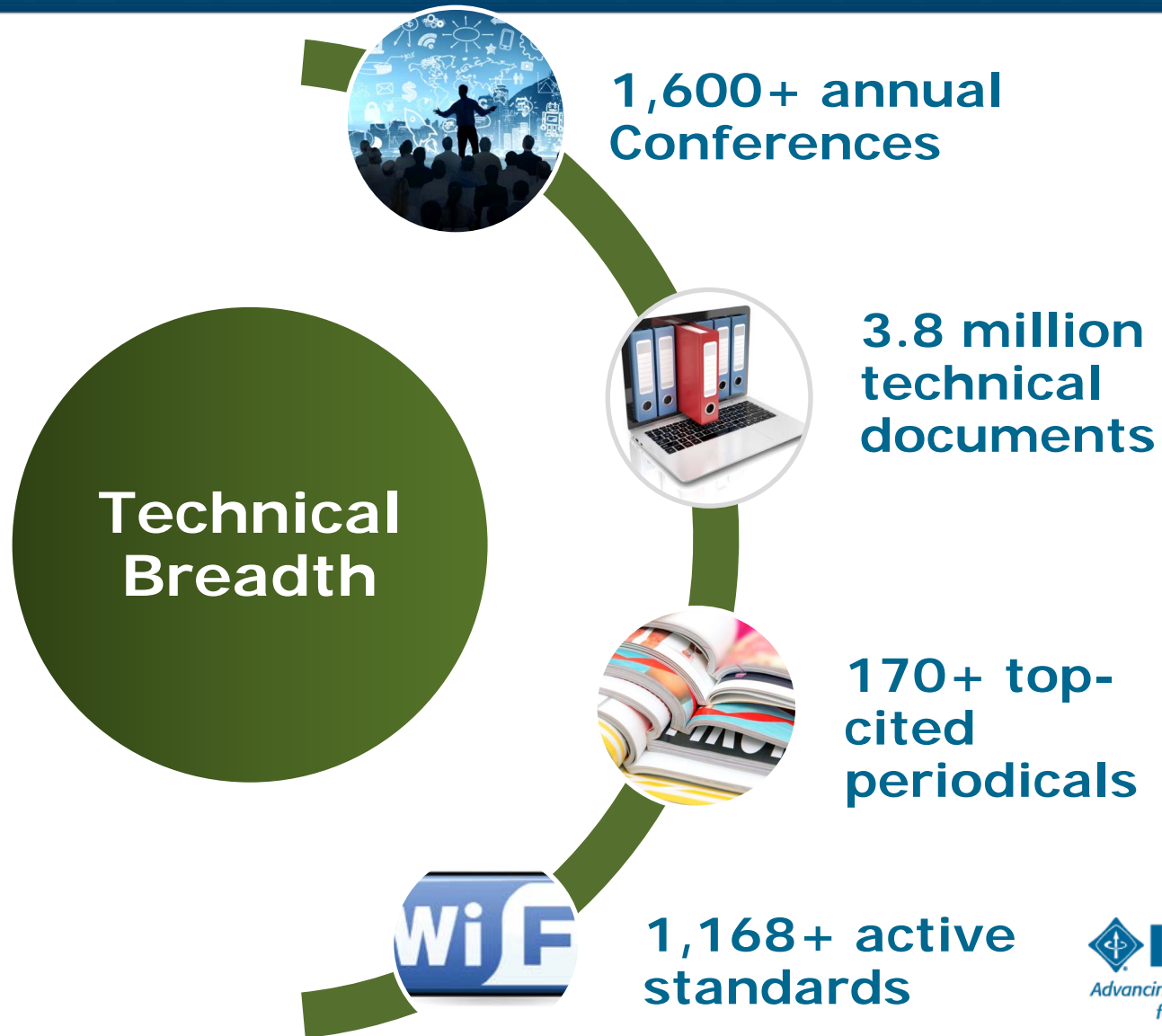
To be essential to the global technical community and to technical professionals everywhere, and to be universally recognized for the contributions of technology and of technical professionals in improving global conditions.

Pull the string, and it will follow wherever you wish.
Push it, and it will go nowhere at all.
— Dwight D. Eisenhower

IEEE at a Glance



IEEE at a Glance



A leader is a dealer in hope.
— Napoleon Bonaparte

Collaboration

... the cornerstone of technological and career development

334 Local Geographic Sections and 2,806 Student Branches

- Provide a community of colleagues
 - Members build networks through local Section, Chapter, Student Branch activities
- Volunteer leaders develop new skills
 - Gain management, teamwork, and leadership experience
- Provide local professional and technical activities
- Recognize achievements of members and others

2,116 Local Technical Chapters and 459 Affinity Groups

- Bring members together with similar technical interests
- Sponsor conferences, workshops tutorials, seminars, etc.
- Develop publications: Journals, Magazines, Newsletters
- Recognize member accomplishments

Before you are a leader, success is all about growing yourself.
When you become a leader, success is all about growing others.
— Jack Welch

Educating for Success

IEEE educational programs enable students and professionals to achieve their goals.



IEEE Educational Programs and Resources:

- ▶ Career Preparation
- ▶ Continuing Education
- ▶ Pre-University Programs
- ▶ Professional Certification

Leadership and learning are indispensable to each other.

— John F. Kennedy

Grazie!

IEEE is What's Next

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