

# KEEPING CURRENT

ENGINEERING

## How High Can You Climb?

Survey shows engineers might not be viewed as best choices for CEO positions

Timothy D. Cook, Apple Inc.; Alan Mulally, Ford Motor Co.; Jack Welch, General Electric. What do these individuals have in common?

They're all engineers—and former or current CEOs.

Recent research, however, shows most Americans don't view engineers as the best candidates for the corner office. A related survey of ASQ members revealed just 9% of workers believe engineers would make the best CEOs, behind those in operations (23%), finance (17%), marketing (14%), academia (13%) and sales (11%).

The survey, fielded by Kelton Global in January, was conducted in conjunction with a second survey of ASQ members who are engineers that explored their opportunities and desires to be corporate leaders and the skills needed to be successful.

"Despite the fact that some of the greatest business leaders in history, from Henry Ford [former Ford Motor Co. CEO] to Lee Iacocca [former Chrysler Corp. CEO], have been engineers, many people don't connect engineers with the boardroom," said Cheryl Birdsong-Dyer, an ASQ member and professional process engineer. "But engineers who can combine their analytical and critical thinking skills with strong communication ability can be a powerful asset when it comes to top-level decision making."<sup>1</sup>

### People skills not a forte

While engineers may not be perceived as having high CEO potential, many likely possess the skills necessary for the role.

Of the engineers polled by ASQ, 69% said their skill sets provide a solid foundation for becoming a successful CEO.

Interestingly, survey results indicated the qualities workers value most in their organizations' leaders are the same qualities they find most lacking in their current leaders. Of the Americans surveyed by Kelton, 30% said honesty is the trait they value most in their organization's leaders, while 22% cited communication skills. Critical thinking and commitment also were noted as key leadership qualities at 11% and 10%,



respectively, according to the survey.

Similarly, nearly 30% of ASQ member engineers cited honesty as the skill most important to being an effective leader, followed by communication skills at 20%. Problem solving and analytical thinking expertise also were noted by survey respondents as valuable skills for CEOs.

But many engineers surveyed believe the skills that make an effective engineer translate well to the CEO suite.

An engineer's analytical background becomes especially useful when solving

the high-level, complex problems CEOs often face, said Michael Lovell, chancellor of the University of Wisconsin-Milwaukee and former dean of the university's college of engineering and applied science.

"One of the things we learn in engineering is to be a systems-level thinker, so that we see a very big picture in how adjusting one area affects and impacts downstream other areas," Lovell said. "That's really important when you're running a large, complex organization."<sup>2</sup>

In fact, many engineers reported they already are in some form of leadership role. Of ASQ members who are engineers, 61% said they are currently in a management or leadership role, with nearly 75% overseeing up to nine employees, and 14% supervising 10-19 employees.

Others are more cautious. Not all engineers said they believe they have what it takes to be successful CEOs. Of the engineers polled, 17% said leaders need more than strong analytical skills. Furthermore, of the 39% of engineers polled who are not in leadership roles, 20% said they have no interest in reaching that level, compared to 16% who have a high interest.

### Engineers-turned-CEOs

With the right combination of skills and experience, however, engineers can adeptly lead organizations—even large, global ones.

Last December, General Motors (GM) named Mary Barra as the organization's new CEO. Barra has a bachelor's degree in electrical engineering. In February, Microsoft handed its CEO title to Satya Nadella, who

*(continues on p. 12)*

ASQ

## ASQ TAPS RETIRED U.S. ARMY LEADER AS NEXT CEO

Bill Troy, a recently retired lieutenant general from the U.S. Army, has been named ASQ's next CEO. He is to start in the new role on April 21.

Earlier this year, Troy was appointed to the post by the ASQ Board of Directors, which cited his passion for quality, strong diplomatic and global relationship management skills, and outstanding leadership credentials. "After a complete and exhaustive search, ASQ is indeed fortunate to have Bill join us on our global mission," said ASQ Chair Stephen Hacker. "As an accomplished leader, Bill brings the skills and practical knowledge we need at this time in our journey."



Troy's most recent post was as director of Army staff at the Pentagon, with oversight of 20,000 military and civilians, and the Army's Test and Evaluation Command, among other duties. In 2001, Troy was a senior fellow at Harvard University's Weatherhead Center for International Affairs in Cambridge, MA.

"My background in leadership and strategy has prepared me well for this challenge in taking ASQ to the next level," Troy said.

"I follow in the footsteps of a leader of enormous insight, influence and integrity—Paul Borawski—and my fervent wish is to build on the foundation he, the ASQ staff and member leaders the world over have built. With that foundation, we will build the global ASQ presence and contribute to solving problems and improving processes and lives throughout the world," he said.

Borawski plans to retire in May after 27 years with ASQ, most recently as CEO. He also served as executive director and chief strategy officer.

## Who's Who in

**NAME:** Belinda Chavez.

**RESIDENCE:** Pearland, TX.

**EDUCATION:** MBA from Louisiana Technical University in Ruston.

**FIRST JOB RELATED TO QUALITY:** Procedure development and contract administration at Thiokol Corp.



**CURRENT JOB:** Honeywell Technical Solutions Inc. operations manager. Chavez supports the NASA Safety Center's audits and assessments office (AAO) and is directly responsible for the Johnson Space Center (JSC) task orders for inspection and assessment of space flight and training hardware, requirement flow-down analysis for NASA Centers, and the development and maintenance of the online surveys, audits, assessments and reviews information system used to track audit findings and associated corrective action plans for AAO audits and assessments.

**PREVIOUS JOB:** Dedicated lean Six Sigma Black Belt working on improvement projects supporting the NASA space shuttle program. Also supported NASA's International Space Station and space shuttle programs as safety, quality and mission assurance manager for United Space Alliance.

**ASQ ACTIVITIES:** Served on the ASQ Board of Directors and as Region 14/14A director for six years. Also served on the Section Affairs Council for three years. Currently is the Education Division chair-elect, Aviation, Space and Defense Division voice of the customer (VOC) chair, Section 1422 VOC chair, Section 1418 nominating committee chair, and performance awards and recognition program co-chair.

**OTHER ACTIVITIES/ACHIEVEMENTS:** Recipient of the NASA Space Flight Awareness award, the Astronaut's Silver Snoopy Award and NASA JSC quality assurance special achievement recognition for her work in support of the International Space Station program.

**RECENT HONORS:** Chavez was included in the 2013 class of ASQ fellows. Part of a group that received the NASA Safety Center Audits and Assessments Office contractor Dream Team award.

**PUBLISHED WORKS:** Articles for Education Division newsletters, *Workforce Development Brief* and *Journal for Quality and Participation*.

**PERSONAL:** Married with two grown children and three grandchildren.

**FAVORITE WAYS TO RELAX:** Watching movies (especially comedies), reading and playing *Mahjong*.

**QUALITY QUOTE:** Continuous learning comes with continuous improvement. It's all about maintaining quality in everything we do that helps guarantee growth and success.

# KEEPING CURRENT

## Engineers *(continued from p. 10)*

has a master's degree in computer science and a bachelor's degree in electrical engineering.

In the cases of Barra and Nadella, the key to their promotions seems to be rooted in their ability to make an impact by pairing technical expertise with communication, teamwork and leadership skills.

While Barra was executive director of GM's manufacturing engineering area, she worked with a team of executives to overhaul and streamline GM's global production plants and processes to better integrate them with product development efforts. This helped lower development costs and more quickly move products to market.<sup>3</sup>

Meanwhile, in his previous post, Nadella led Microsoft's cloud computing efforts. During a time when the company is trying to remain relevant in markets such as mobile and internet search, it's speculated Nadella's technical skills played a large role in his being selected as CEO.<sup>4</sup>

"During this time of transformation, there is no better person to lead Microsoft than Satya Nadella," Gates said. "Satya is

a proven leader with hard-core engineering skills, business vision and the ability to bring people together."<sup>5</sup>

What should engineers do if they are interested in obtaining a leadership role and possibly becoming CEO one day?

According to Hermann Viets, president of Milwaukee School of Engineering (MSOE), one area engineers are often lacking in is soft skills, and it's something the school addresses in its curriculum.

“An engineer's **analytical background becomes especially useful** when solving the high-level, complex problems CEOs often face.”

"Nobody gets out of MSOE without taking an intensive speech course. We have a lot of emphasis on communication skills, both written and verbal," he said.<sup>6</sup>

ASQ engineers also shared some advice for engineering students looking to enter into leadership roles. Key tips included: learn big picture thinking, develop communication skills, and take business and liberal arts courses to develop skills beyond the quantitative work completed in engineering coursework.<sup>7</sup>

Lovell noted oral presentation and

communication skills are important for any engineer. "You can have the best idea in the world," he said, "but if you can't convey it to others, it doesn't do any good."<sup>8</sup>

—Amanda Hankel, assistant editor

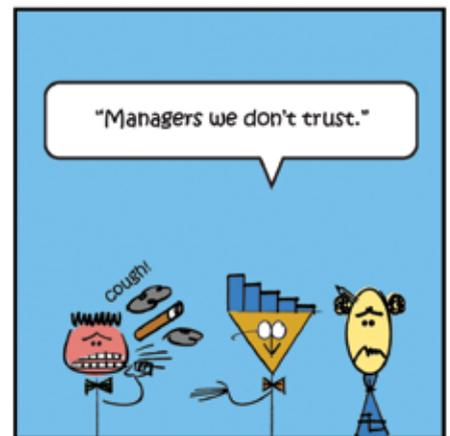
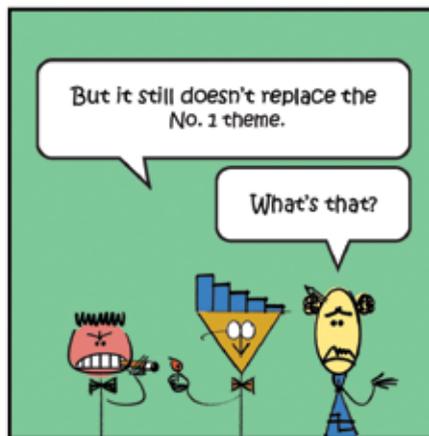
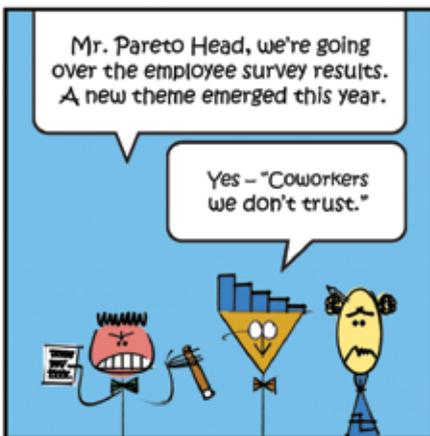
### REFERENCES

1. ASQ, "Communication, Honesty Among Traits Most Desired and Lacking in Corporate Leaders, ASQ Survey Says," press release, Feb. 18, 2014, [www.asq.org/media-room/press-releases/2014/20140218-engineers-week-release.html](http://www.asq.org/media-room/press-releases/2014/20140218-engineers-week-release.html).
2. Rick Barrett, "Engineers Not Seen as Leaders, ASQ Survey Finds," *Milwaukee Journal Sentinel*, Feb. 12, 2014, [www.jsonline.com/business/engineers-not-seen-as-leaders-b99204262z1-245301091.html](http://www.jsonline.com/business/engineers-not-seen-as-leaders-b99204262z1-245301091.html).
3. Paul Lienert and Ben Klayman, "New CEO Barra a GM 'Lifer' Bent on Tearing Down Walls," Reuters, Jan. 13, 2014, <http://in.reuters.com/article/2014/01/12/autoshow-gm-barra-idiNDEEA0B08020140112> (case sensitive).
4. Nick Wingfield, "Microsoft Names New Chief; Gates Becomes Adviser," *New York Times*, Feb. 4, 2014, [www.nytimes.com/2014/02/05/technology/microsoft-names-engineering-executive-as-new-chief.html?\\_r=0](http://www.nytimes.com/2014/02/05/technology/microsoft-names-engineering-executive-as-new-chief.html?_r=0).
5. Ibid.
6. Barrett, "Engineers Not Seen as Leaders, ASQ Survey Finds," see reference 2.
7. ASQ, "Engineer Your Way to Leadership: ASQ Members Provide Advice to Engineering Students," press release, Jan. 30, 2014, [www.asq.org/media-room/press-releases/2014/20140130-engineers-advice-to-students-sidebar.html](http://www.asq.org/media-room/press-releases/2014/20140130-engineers-advice-to-students-sidebar.html).
8. Barrett, "Engineers Not Seen as Leaders, ASQ Survey Finds," see reference 2.

### BIBLIOGRAPHY

ASQ, "Communication, Honesty Among Traits Most Desired and Lacking in Corporate Leaders, ASQ Survey Says," press release, Feb. 18, 2014, [www.asq.org/media-room/press-releases/2014/20140218-engineers-week-release.html](http://www.asq.org/media-room/press-releases/2014/20140218-engineers-week-release.html).

## Mr. Pareto Head BY MIKE CROSSEN



## SHORTRUNS

**FREE YELLOW BELT** training is being offered to all U.S. veterans and active-duty military by KnowWare International. The lean Six Sigma (LSS) Yellow Belt training and certification will prepare students for further LSS belt certification, and consists of online training, reading and a final quiz. For more details, visit [www.qimacros.com/moneybelt/toc.html](http://www.qimacros.com/moneybelt/toc.html).

**INFORMAL NETWORKING** events such as a Jenga competition and Lego-building activities will be organized at ASQ's World Conference on Quality and Improvement May 5-7 in Dallas. There also will be a whiteboard area for connecting with other conference-goers to discuss quality ideas or arrange get-togethers for sessions and events. For more details about the three-day conference, visit <http://wcqi.asq.org>.

**ASQ'S KNOWLEDGE** Center has released a new case study about the United Arab Emirates' journey to quality and excellence. The five-page case study highlights the country's far-reaching macro-level quality and excellence initiatives for all sectors of its economy, including government departments and public and private sectors. Read the case study at <http://asq.org/knowledge-center/case-studies-UAE-excellence-journey.html> (case sensitive).

**THE INDIAN INSTITUTE** of Technology (Banaras Hindu University) Varanasi and ASQ India have signed a memorandum of understanding to jointly work on educational quality improvement at both the student and institutional levels. For more information, visit [www.itbhuglobal.org/chronicle/archives/2014/01/iit\\_bhu\\_varanas\\_2.php](http://www.itbhuglobal.org/chronicle/archives/2014/01/iit_bhu_varanas_2.php).

**A STUDENT BRANCH** of ASQ at North Carolina State University in Raleigh has been approved. The branch is sponsored by the ASQ Raleigh Section. The ASQ Carolina Low Country Section has changed its name to the ASQ Charleston Section to more clearly identify the geographic area it serves.

## DATE IN QUALITY HISTORY

QP looks back on an event or person that made a difference in the history of quality.

### April 16, 1894

Jerzy Neyman, one of the principal architects of modern statistics, was born on this date. His influence and ideas contributed to advancements in probability theory, hypotheses testing, confidence intervals and the expanded chi-square.

Neyman was born in Bendery, Russia, and studied physics and mathematics at the University of Kharkov. When he was 27, Neyman moved to Poland because of war between Poland and Russia. A short time later, he moved to London and worked with mathematicians and statisticians Karl Pearson, R.A. Fisher and W.S. Gosset.

Ten years later, Neyman began working with Pearson's son, Egon. The two developed a theory of testing hypotheses. Later, Neyman developed a theory of survey sampling. He later became the first head of the statistics department at the University of California, Berkeley. He died in 1981.

#### SOURCE

University of Minnesota, Morris Statistics, [http://mnstats.morris.umn.edu/introstat/history/w98/Jerzy\\_Neyman.html](http://mnstats.morris.umn.edu/introstat/history/w98/Jerzy_Neyman.html) (case sensitive).

#### BALDRIGE AWARD

## TEXAS MEDICAL CENTER DECLINES BALDRIGE AWARD

Baylor Regional Medical Center at Plano in Texas has turned down its Malcolm Baldrige National Quality Award in the wake of several medical malpractice lawsuits alleging a former Baylor neurosurgeon operated while under the influence of alcohol and drugs.

"Right now, Baylor Plano is working to address allegations being made against it by plaintiffs' attorneys in lawsuits and in the media," hospital officials said in a written statement issued in February. "So at this time, out of respect for the Baldrige award and to not give any misleading allegations an elevated public platform, Baylor Plano is announcing this decision."

This is the first time an organization has ever declined a Baldrige award.

"We appreciate the difficulty of this decision for Baylor Plano and encourage the organization to reapply for the Baldrige award in the future," said a short statement issued by the Baldrige Performance Excellence Program.

With Baylor's decision to bow out, only two organizations will receive the 2013 Baldrige award at a ceremony in April in Baltimore: the Pewaukee School District in Wisconsin and Sutter Davis Hospital in California.