



# GAME2017 CHANGERS

Ideas, Innovation, Inspiration

Nicholas Dirks • Tony F. Earley Jr. • Sen. Jeff Flake • Joe Gebbia • Pat Gelsinger • Josh Green  
Robert Haas • Patrick Doyle • Catherine Hoke • Jennifer Hopp • Van Jones • Chet Kapoor  
Rep. Ron Kind • Rep. Zoe Lofgren • Leader Kevin McCarthy • Mark McLaughlin • Rami Rahim  
Tomi Ryba • Mayor Libby Schaaf • Meg Whitman

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Here in Silicon Valley, we don't sit on the sidelines and let the other guy or gal take the risks, tackle the impossible and then jeer when they fail. No, we as a citizenry envision a future of innovation, entrepreneurship and intellectual fortitude where we make the impossible not only possible but a reality.

We form and mold reality by embracing collaboration, cheering for creativity and supporting bold thinking. As you will see in this sixth edition of "Game Changers", there are 21 people bold enough to share their game changing ideas, initiatives or inventions that they think will change the future and make a difference.

As you read their approximately 500-word essays, we encourage you to be inspired to think big, join an initiative or movement or collaborate with our fearless authors' in finding solutions to our communities most pressing problems and envisioning a technologically advanced society that provides for all its constituencies.

After reading these essays, they reminded us of a quote by Oliver Wendell Holmes, "Many ideas grow better when transplanted into another mind than the one where they sprang up."

So let us not jeer from the sidelines but instead continue to celebrate, cheer and encourage the ideas of those willing to take the risk, dream the impossible and make it a reality.

Sincerely,  
Carl Guardino  
CEO and President, Silicon Valley Leadership Group

and

Kimberly Ellis  
SVP, Communications and Marketing, Silicon Valley Leadership Group



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Ideas, Innovation, Inspiration

Cory Booker.....	1
Safra Catz.....	3
Nicholas Dirks.....	5
Tony F. Earley Jr.....	7
Jeff Flake.....	9
Joe Gebbia.....	11
Pat Gelsinger.....	13
Josh Green.....	15
Robert Haas & Patrick Doyle.....	17
Catherine Hoke.....	19
Jennifer Hopp.....	21
Van Jones.....	23
Chet Kapoor.....	25
Ron Kind.....	27
Zoe Lofgren.....	29
Kevin McCarthy.....	31
Mark McLaughlin.....	33
Rami Rahim.....	35
Tomi Ryba.....	37
Libby Schaaf.....	39
Meg Whitman.....	41



# CORRECTING AMERICA'S Criminal Justice SYSTEM

By Cory Booker  
*U.S. Senator, D-New Jersey*

Over three decades ago, elected officials from both parties - with the stated intention of protecting the public good - enacted in a bipartisan effort injurious sentencing laws that have resulted in the mass incarceration crisis that now plagues our country.

America is known as the land of the free, but thanks to stunning growth of mass incarceration linked to the War on Drugs, America jails or imprisons more people than any country on earth. This shameful distinction is costing us dearly, both in terms of taxpayer dollars spent and human potential wasted.

Our federal prison population has grown by nearly 800 percent over the past 30 years, mostly due to the imprisonment of low-level nonviolent drug offenders. The burden of our broken criminal justice system falls disproportionately on minorities and the poor. For instance, there is no differ-

ence between blacks and whites' rate of using or selling drugs, but blacks are 3.6 times more likely to get arrested for selling drugs.

There's a high price to mass incarceration: The explosion in the prison population costs taxpayers a quarter trillion dollars per year. Since 1998, Congress has increased spending on federal prisons by 45 percent.

But the societal costs are far greater than mere dollars and cents.

Today, 1 in 28 children are growing up in America with a parent currently in prison, and 1 in 9 African American kids are growing up with their mom or dad in prison. What's more is according to a

report from the Center for American Progress, close to half of all children are growing up with a parent with a criminal record.



**There's a high price to mass incarceration: The explosion in the prison population costs taxpayers a quarter trillion dollars per year. Since 1998, Congress has increased spending on federal prisons by 45 percent.**





Words you live by?

**In the end, I'm less interested in what you have to tell or sell as in how you choose to live and give**

Favorite app?

**Twitter**

About 60,000 people are released from prison each year, and as many as 1 in 3 Americans have some kind of criminal record - regardless of whether or not they were even convicted of a crime.

It is clear that the long term effects of mass incarceration aren't contained behind prison walls: Americans with a criminal record often have significantly more difficulty finding a job, finding affordable housing, or going back to school.

And many of these folks aren't just providing for themselves, but for their children and families.

These children grow up in homes where they are more likely than their peers to see their parent denied opportunity, faced with discrimination, and ultimately their own chances to succeed limited.

Last book read?

**The Assassins' Gate: America in Iraq**

Mentor or role model?

**Virginia Jones, tenant's advocate from Newark, NJ**

Last year, a bipartisan group of Senators introduced legislation that will begin to reverse the misguided course of our criminal justice system. Our proposal includes important reforms that revise sentencing guidelines for nonviolent offenders and makes it easier for individuals convicted of nonviolent crimes to expunge their records, helping them successfully re-enter society.

Our proposal is a start, but there is still much work to be done. Our country and our Congress must come together with a sense of purpose, strength, and resolve to do what needs to be done to fix these problems.

# STEM Education Begins @Home with d.tech

By Safra Catz  
CEO, Oracle

Many of the world's most innovative technology companies start in Silicon Valley for a reason and it's not the weather. It's our culture of courage and entrepreneurship.

But there is a vital area where our institutions do not excel: Relative to our competitors in other countries, U.S. primary and secondary schools do not educate, train, and prepare our young people well enough for the innovation challenges of the future. More specifically, we must do a better job early on of cultivating students in the STEM subjects - science, technology, engineering and math - to build our innovation capacity.

The World Economic Forum ranks the U.S. 44th in the quality of its mathematics and science education. Despite soaring demand for such skills, the percentage of American students going on to earn undergraduate and advanced STEM degrees, 34 percent, has barely budged over the past decade. In addition, less than half as

many American women as men earn STEM degrees.

Meanwhile, over two thirds of the engineers who receive Ph.D.s from U.S. universities are not American citizens. And our national employment policies continue to send most of them home after they graduate - to start the next great technology company and compete against us.

Sooner or later this glaring shortcoming is going to catch up with us if we don't take creative steps to do something about it. Oracle is.

**We must do a better job early on of cultivating students in the STEM subjects.**

In September, we expect to break ground on a two-story, 64,000-square-foot charter school, called d.tech, that we hope will become a model for developing the technical talent of the future once it opens in the fall of 2017.

D.tech, to be located on Oracle's Redwood Shores campus, will be open to every student who lives in California. And it will adhere to the same set of



### Favorite app? **Waze**

curriculum standards as every other public high school in the state. But the school, the idea of Oracle's Executive Chairman and Founder Larry Ellison, will put a distinct emphasis on design thinking and project-oriented teamwork - because in real life, people are asked to solve complex problems, often in groups, and usually with a deadline.

The state-of-the-art, LEED-certified building will have the look and feel of Oracle's iconic glass buildings, surrounded by gorgeous green spaces. D.tech, whose 30 faculty members will serve about 550 students, will be fully autonomous. Even so, Oracle technologists, financial experts, project managers, and other professionals will volunteer their time to teach and mentor students in various workshops.

In order to have enough engineers to meet the demand, we have to do a better job of making STEM education widely available to a far more diverse group of American students. That demand is rising not just at tech companies, but among all companies that rely on technology to make their

### Mentor or role model? **My mother**

businesses run better - which, by the way, is nearly everyone.

We need more high school students building upon the science and math fundamentals, not just acquiring the minimum. We need more college students choosing technical disciplines because they are both prepared to do so and because they believe it will advance their career opportunities.

As the daughter of two people who committed their professional lives to education - my mother was a special-ed teacher and my father was a college professor - I know this is not a problem to be solved quickly. But we need to get started. Truth is, of all the tough challenges facing us today, this one should be solvable with some innovation and a little bit of courage.



# The View From Berkeley

## *The Public Good & our Public Universities*

By Nicholas Dirks  
*Chancellor, UC Berkeley*

The fate of our great public universities is increasingly under threat, hanging in the balance between steadily diminished state funding and our need to invent new financial models that recapture Abraham Lincoln's belief that higher education should be seen as a public good and not the sole domain of the private sector and elite society.

We know that our citizens will not become productive members of society and participants in our democracy without significant training, knowledge and enlightenment. We also know how important basic and applied academic research is when it comes to innovation, entrepreneurship and our economic vitality. In recent years, however, higher education's status as a public good has been increasingly contested as funding has shifted from taxpayers to consumers.

In terms of lasting, measurable and

concrete contributions to the greater good, however, what truly and consistently distinguishes the great publics from the great privates in America has to do with the make-up of the student body, and more specifically, with the commitment and capacity of public universities to provide an excellent education to the broadest possible swath of the public. As one way to make this point, consider the enrollment of students from low-income families making less than \$50,000 a

year. According to our most recent data, UC Berkeley and UCLA, the two top public universities in the United States, enrolled just over 20,000 of these students - as many as the top 16 U.S.

private universities combined.

What we now need is the mutual agreement, and will, to find new and creative ways to fund public universities precisely because of their critical importance to our economy, society, culture and democracy. With public universities, including my own, Berkeley,



**What we now need is the mutual agreement, and will, to find new and creative ways to fund public universities.**







Words you live by?

**It always seems impossible until it's done**

Favorite app?

**Google Maps**

Last book read?

**The Passage of Power**

Mentor or role model?

**Clark Kerr, first chancellor of Berkeley**

now facing serious financial challenges, a great deal is riding on our ability to develop new sources of revenue and support that will sustain our societal contributions. After multiple cycles of cuts in state funding, the great recession of 2008 led to an unprecedented decline. Berkeley, for example, lost more than half its state funding, and even after the recovery of the state economy, today receives only 12 percent of its budget from the state appropriation (down from 33 percent in 2004), receiving only a little more than half what it received before the recession.

I believe the time has come to develop a new idea of public higher education that rescues the original sense of the public trust from the disheartening turmoil of state level politics and the generalized public disinterest in the work of top research universities. What we are now engaged in is a fundamental defense of the concept of the

public university, a concept that we must reinvent in order to preserve. Yet, if Berkeley is to succeed in forging a path that others can follow, it will require advocacy, action and change well beyond the university's borders. In the year ahead I plan on engaging private sector leaders in an urgent and unprecedented dialogue about ways they can support and advocate for public higher education in a manner that is commensurate with the benefits they enjoy as a result of the research conducted and education provided at our great public universities.



# for Carbon-Free Transportation

By Tony F. Earley Jr.  
*Chairman, CEO and President,  
PG&E Corporation*

After a disappointing 2015, when cheap gasoline drove electric vehicle sales into the slow lane, this year's market started with a roar.

In a single week, Tesla Motors booked 325,000 advance orders for its Model 3 - a surge that would nearly double the number of EVs on U.S. roads. Chevy's comparable entry, the Bolt, will arrive in California showrooms even sooner.

Yet if nothing else changes by the time both 2017 models hit the streets, hordes of new EV owners will quickly find themselves asking a question today's drivers have come to dread: Where can I plug in?

Unfortunately, there's no easy answer. Across most of Northern and Central California, where EV adoption dramatically outpaces the rest of the nation, the network of public charging stations lags far behind.

How far? To avoid "range anxiety,"

industry experts put the ideal ratio at one public charger for every four EVs. Right now, it's one per 25. And that's looking in the rearview mirror, not toward the growth ahead.

More than convenience is at stake. Together, transportation and electricity generation produce more than half of all greenhouse gas emissions. Across the U.S. overall, the lion's share still comes from power plants. But here, it's the reverse - California's rapid shift to

renewable energy means that transportation now dwarfs all other sources.

So in the fight against global warming, transportation electrifica-

tion is the new game changer. Hence Governor Brown's target of 1.5 million zero-emission vehicles by 2025.

Meeting that goal will require swift progress on a vast scale - something the state's power grid operators are uniquely able to provide. That's why a rarely seen coalition of environmental



**In the fight against global warming, transportation electrification is the new game changer.**





Words you live by?

**Let the past go, don't feel sorry for yourself - it's like your a\*\*, it's behind you**

Favorite app?

**MyFitnessPal**

organizations, automakers, economic justice advocates, non-utility energy providers, and others have joined PG&E in a new proposal to increase access to EV charging - and fast.

Under the agreement, PG&E would collaborate with charging station companies to install 7,500 smart chargers at locations specifically chosen to help spur EV adoption, such as multi-unit apartment and condo complexes. Highway corridors would get 100 DC fast chargers - which fully charge a Nissan Leaf in less than 30 minutes.

The program would also help employers provide workplace charging to soak up the excess solar energy flooding onto the electric grid during daytime hours. And, working with local organizations, the plan would place at least 15 percent of chargers in low-income and disadvantaged communities, where EVs have been slow to take off.

Last book read?

**Duty: Memoirs of a Secretary at War**

Mentor or role model?

**My father**

Why trust PG&E to make all that happen?

Installing EV chargers isn't cheap, and their profit potential is uncertain. That's the reason so few have been installed under today's purely commercial incentives, despite the obvious demand.

As for the price tag, PG&E's proposal would raise the average residential customer's bill by 22 cents per month - less than a penny a day. That's a nominal sum in return for the clean air, reduced carbon footprint, and other environmental benefits that we all reap from each new EV that rolls off the assembly line, whether we drive one or not.

The continued lack of public charging stations is a problem California can no longer afford. Climate change won't wait. Neither should we.



# VENUE ACT: A Path to PATENT REFORM

By Jeff Flake  
*U.S. Senator, R-Arizona*

Patents are vital to promoting technological innovation and spurring economic growth. The patent system dates back centuries, but today the health of this system is at risk. There is an ever-increasing problem of patent trolls bringing baseless and frivolous lawsuits in order to extort unjustified financial settlements from those who have done nothing but create products for sale.

Patent trolls represent a needless drain on our economy. They are entities that own patents but don't use them to bring products to market. An article in the Harvard Business Review concluded that trolls "cost defendant firms \$29 billion per year," in direct costs while "patent litigation destroys over \$60 billion in firm wealth each year."

Patent trolls also pose a significant threat to innovation and job creation. It is no coincidence that the bulk of patent troll suits are filed against small businesses, which often lack the resources to endure protracted litigation.

These are carefully planned shakedowns.

Fortunately, a bipartisan congressional effort is underway to remedy this issue. Earlier this year, I joined my colleagues on the Senate Judiciary Committee to pass comprehensive patent reform legislation. While the committee approval of that legislation is encouraging, and I remain hopeful that it will receive a vote from the whole Senate, it did not address one of the most significant components

of the patent troll issue - judicial venue.

Part of what makes patent trolls such a threat to innovators is their ability to

bring their suits before friendly courts. These courts are frequently unrelated to the alleged infringement and are selected only because they might favor trolls.

Just look at the numbers and the problem becomes clear. In 2009, 9 percent of all U.S. patent cases were filed in one particular federal district. By 2015, that



**Like the ogres they are named for, patent trolls stand as nothing more than ugly obstacles on the bridge to progress.**





Words you live by?  
**Assume the best, look for the good**

Favorite app?  
**WatchESPN**

Last book read?  
**438 Days**

Mentor or role model?  
**Dean Flake**

number had increased to over 44 percent. That means that almost half of all patent lawsuits - a four-fold increase in six years - ended up in one court.

These numbers get worse when you look at who brings the suits. Of the cases brought in that court in 2015, 95 percent were initiated by patent trolls. Such a distortion in case distribution is inexplicable.

The courts have made it clear that they will not solve this problem, which means that venue reform is only going to come from Congress. To that end, I have introduced the VENUE Act, legislation that will ensure patent cases are litigated in courts where there is an actual connection to the patent dispute.

Specifically, the VENUE Act would require patent cases to be litigated in the federal court (1) where the defendant has its principal place of business;

(2) where the alleged infringing act; or (3) where the inventor conducted research and development that led to the patent. In essence, this bill would remove the artificial home field advantage that has inexplicably been allotted to patent trolls for too long.

Passing the VENUE Act is a rare chance for Congress to foster an environment of economic growth and job creation. Like the ogres they are named for, patent trolls stand as nothing more than ugly obstacles on the bridge to progress. Knock them over and you reveal a true game changer - an army of small businesses and innovators that are free to create, invest and grow.



By Joe Gebbia

*Chief Product Officer and Co-founder,  
Airbnb*

The most successful entrepreneurs of the last decade have disrupted entire industries, made global communication available and affordable anywhere on the planet and fundamentally altered the nature of our economy. I believe the biggest challenges that lie ahead are more fundamental - how do we use technology to build trust, community and connection? How can engineering and design help us create community and connection instead of isolation and separation?

I believe that designing for and building trust will be a game changer in 2017.

It certainly has been for Airbnb. When my cofounders and I first started talking to investors, trust was at the root of every rejection we received. We were told time and again that no one would invest in a service that encourages strangers to sleep in the homes of other strangers, but we believed in what we were doing. As designers, we are taught that design is much more than the look and

feel of something; it's the entire experience. To build trust, we worked to design an experience that made people feel comfortable and safe. The first thing we learned is that a well designed reputation system is critical for building trust. That meant creating profile pages where users can talk about who they are, link to their social media accounts and upload photos. In nearly 50 percent of trips, guests visit a host's profile at least once, and 68 percent of the visits occur in the plan-

ning phase that comes before booking. This is especially true for first time Airbnb users, who are 20 percent more likely to visit a host's profile before booking.

**Organizations that can design for trust will help people make connections that go far beyond just a transaction to building a community.**

In a recent joint study with Stanford University, we learned that people are more likely to trust people who are more like them, which creates bias. However, we also discovered that reputation will override this natural bias. We found that with over 10 reviews, reputation wins out over similarity; the



Words you live by?  
**Do your best, do the right thing, let them know you were there**

Favorite app?  
**Sky Guide**

right design can help us overcome some of our most deeply rooted biases.

We didn't get it right the first time; many people were hesitant to leave reviews, which led to a breakdown in the system. We had to adjust our design to encourage honesty, so we created a "double blind" process where reviews wouldn't be revealed until both guest and host had submitted. The result was a 7 percent increase in review rates overall, with a 2 percent increase in negative reviews.

Transparency is also incredibly important for promoting trust, but how much you share is key. If a guest's message to a host is too short or too long, their acceptance rate goes down. To find the right balance, we designed the size of the message box to one that encourages the right amount of disclosure. We believe that with the right design, people will continue to be willing to overcome their natural biases

Last book read?  
**Start With Why**

Mentor or role model?  
**Charles and Ray Eames**

and connect with one another. Organizations that can design for trust will help people make connections that go far beyond just a transaction to building a community. Now that is a game changer.

# Bridging the Great CYBER SECURITY Divide

By Pat Gelsinger  
CEO, VMware

As an increasing percentage of the global GDP and an even larger percentage of the growth is online, cyber challenges are now central to all manner of personal and corporate life. To address today's complex and dangerous cyber threats, incremental change will not be enough.

At VMware, we look at cybersecurity from several perspectives. What we see is that the security challenges we face can no longer be addressed in an ad hoc, reactive way. New sophisticated threats require a broader, systematic approach that enables improvement in security but creates a platform and ecosystem that is raising boats for the entire security related industry.

This is easier said than done given the state of cybersecurity thinking in the C-Suite.

Earlier this year, VMware sponsored research conducted by The Economist Intelligence Unit, which surveyed 1,100 senior executives on data security practices within their firms. The results showed a profound disconnect over the importance of cybersecurity between senior business leaders (CEOs, COOs, CFOs) and senior technical decision makers

charged with security (CIOs and CISOs). This divided mindset reflects the fragmented approach that has made security an afterthought in corporate planning and priorities.

The inevitable result is the Great Divide in cyber security. In a world where the only thing outpacing security spending is security losses (a dismal fact), we must be bold and think different. In a word, what's needed is new architecture for security. Security professionals need to deliver higher levels of security on devices they no longer control, applications they didn't write on networks that are open and on data centers and clouds they

don't operate. Besides that - nothing has changed!

We believe architecture is the key, when you look at security

planning as something resembling cities that expand too fast with no architectural plan. Eventually the combination of rapid growth and lack of planning creates profound challenges that are nearly impossible to address individually. Holistic change is often required. Urban growth without architecture and infrastructure becomes a slum.

In cybersecurity, the parallel to urban



**The only thing  
outpacing security  
spending is security  
losses.**







### Words you live by?

Whatever you do, work at it with all your heart, as working for the Lord, not for human masters, since you know that you will receive an inheritance from the Lord as a reward. It is the Lord Christ you are serving. Col 3:23, 24

### Favorite app?

**VMware Boxer**

sprawl is the complexity of the modern application, and the infrastructure on which it runs. Consider that today, the typical business app connects to seven different clouds, is accessed by myriad devices, and relies on a complex set of interdependent infrastructure services. Any one represents a point of compromise in the chain.

The core problem we face is structural. The solution is a true architecture capable of bridging the divide between security policies and security innovations. That is now possible, thanks to virtualization software.

Virtualization software creates the layer that's in the unique position to provide an architecture for security based on two unique properties - alignment and ubiquity.

Virtualization provides a layer between the physical infrastructure below and the

### Last book read?

**The Outsiders: Eight Unconventional CEOs and Their Radically Rational Blueprint for Success**

### Mentor or role model?

**Andy Grove**

applications above, making alignment possible. It allows you to "connect the dots" and see infrastructure through the lens of the app. Virtualization is the first ubiquitous infrastructure layer we've ever had, cutting across servers, networks, storage systems and even entire clouds.

Virtualization creates the opportunity to transform every aspect of how organizations implement security. Now companies can "architect in" security. It also creates a new renaissance in security innovation that will raise all boats in the security vendor ecosystem.

For VMware, security is a core mission. We are not a security vendor per sé, but we are becoming one of the most important leaders in security for the next decade. The era of building a true security architecture is here, and we are ready to lead. The future of security will never be the same. Carpe Diem, the security Renaissance has begun.

# BACK TO THE FUTURE AGAIN

By Josh Green

*General Partner, Mohr Davidow Ventures;  
General Counsel, Carbon 3D Inc.*

During my 36 years in Silicon Valley, I have been a witness to some of the most remarkable technology advances in human history, including the birth of the personal computer, the rise of the internet and the biotechnology revolution. Each of these achievements, and countless others, required a legion of entrepreneurs who thrive in and contribute to an ecosystem fostering the most remarkable technology achievements on the planet. We all know this, yet often find it difficult to describe how the continuous cycle of growth, pruning and renewal occurs here like nowhere else.

I like the analogy of the “maypole,” a large log planted straight up and around which ribbons are hung and dancing

begins. Most success in the Valley has resulted either from the ability to construct a maypole or attach a ribbon and dance around one. A

recent example is mobility technology, based on the ubiquity of smartphones, whether iPhone or Android (the maypole), which in turn enabled the rise of mobile apps, such as WhatsApp or Uber (attaching a ribbon and dancing).

It is my belief that this “era of apps” is completing its turn at the cycle. Many predicted that there would be a severe bubble burst in 2016 from the app

craze just like what happened after the dot com crash in 2000. However, to date, those predictions have fallen sorely short and I believe that they will continue to do so. The reason that this cycle will end with a short-lived sigh is that IPO markets remained disciplined over the

past eight years even while private company valuations were on a rampage. So, the public was spared massive devaluations. This means that



**I like the analogy of the “maypole,” a large log planted straight up and around which ribbons are hung and dancing begins. Most success in the Valley has resulted either from the ability to construct a maypole or attach a ribbon and dance around one.**





### Words you live by?

Be more concerned with your character than your reputation, because your character is what you really are, while your reputation is merely what others think you are

### Favorite app?

**CBS Sports**

the so-called “punishment” to be meted out will not be nearly as severe as the lack of IPO discipline during the dot com craze. Few care about whether private investors make money or not, so few will attend the funeral for this downturn. Instead, many will spend their time looking for the next maypole, ribbons and dancing.

The cycle inexorably continues. The era of apps were marked by successful companies being “technology assisted” or stated otherwise, largely ribbons and dancing. Using history as a guide, this means that the next part of the cycle will reward “fundamental technology driven” companies that create maypoles. These are the companies that often focus on the simple proposition that creating something valuable means that it is “faster, better, cheaper.” When successful, these companies will enable many ribbons to be hung and many other companies to dance around it.

### Last book read?

**Bully Pulpit**

### Mentor or role model?

**John Wooden, Coach of UCLA Basketball**

I firmly believe that the future will take us right back to where we started decades ago. It will begin again with fundamental technology innovation leading the way and enabling technology assisted companies to be successful. If we do it right, it will be back to the future again and again.





# Excellence & ACCESS

*in Public Higher Education*

By Robert Haas

*Chairman Emeritus, Levi Strauss & Co.*

& Patrick Doyle

*President and CEO, Domino's Pizza, Inc.*

Did you or someone in your family attend a public research university? Even if your answer to this question is “no,” these institutions, which collectively serve 3.8 million students each year, have a profound impact on your life and the lives of all Americans. They not only educate and prepare students from diverse backgrounds to become the teachers, business and civic leaders, lawyers and doctors who are vital to our communities; they also produce much of the fundamental research

that drives scientific and technological discovery. In 1862, Abraham Lincoln signed the Morrill Act, providing federal lands to states to create universities or invest in existing ones to

teach agricultural and mechanical arts, as well as scientific and classical studies. The act created a new system of publicly supported higher education that would respond to the needs of Americans in every state. In recent years, however, state funding of public research universities has declined - by an average of 34 percent nationwide

in the past decade - and state appropriations now account for only 18 percent of the total educational revenue per full-time equivalent student at these institutions. Faced with this reality, public research universities have cut spending and raised tuition in order to maintain their educational and research missions.

This trend is not sustainable. We are blessed with a public university system in the United States that is unequalled in

the world. But this system is at risk if we don't provide the support needed to sustain excellence at these institutions - as well as access and affordability for talented students across our nation.

This will require the broad-based involvement of the federal and state governments, foundations and private philanthropy and business enterprises. Only with their backing, public research universities will be able to continue to serve the nation as engines of intellectual, cultural and economic health and growth.



**As business leaders, we should encourage mutually beneficial partnerships between businesses and public research universities.**





## Patrick Doyle:

Words you live by?  
**Find something that's broken and fix it**

Favorite app?  
**Domino's**

As business leaders, we should encourage mutually beneficial partnerships between businesses and public research universities. Our businesses have a major stake in the success of these institutions. Businesses have benefitted enormously from hiring the graduates and capitalizing on the research produced by public research universities.

What might these partnerships look like? For the past three years, we have been involved in an effort of the American Academy of Arts and Sciences called the Lincoln Project: Excellence and Access in Public Higher Education, which has formulated a new compact for supporting and strengthening America's public research universities. In the course of that work, we saw many

Last book read?  
**Crossroads of Freedom  
- Antietam**

Mentor or role model?  
**My predecessor as CEO  
and current Chairman,  
Dave Brandon**

examples of how foresighted businesses can interact productively with these vital institutions. The private sector can provide stable sources of support for new research and development; create well-paying internship programs for students to finance their educations and to learn skills that will be of immediate use; and provide scholarship funds to universities that educate valued new employees.

If we are to continue to thrive as a nation, businesses - even if only out of self-interest - must step up and support public research universities.

# TRANSFORMING LEGACIES WITH ENTREPRENEURSHIP

By Catherine Hoke  
*Founder and CEO, Defy Ventures*

Entrepreneurship is lauded and celebrated, especially here in Silicon Valley. People chase the dream of being a successful founder as a path available to many regardless of gender, education or social standing. We believe that entrepreneurship is a great equalizer to level the playing field for all. That is why Defy Ventures leverages entrepreneurship training, incubation and funding to transform the legacies of people with criminal histories - the greatest entrepreneurial underdogs in our communities.

At Defy Ventures, we recognize the entrepreneurial nature of drug dealers and gang leaders and we equip proven street hustlers to go legit

by providing entrepreneurship training, character development, Shark Tank-style pitch competitions, startup incubation and executive mentorship. We “transform the hustle” of people with criminal histories (both inside and outside of prisons nationally). Defy has engaged over 3,500 business volunteers nationally who contributed more

than 15,000 hours to mentoring, coaching, investing in and employing our Entrepreneurs in Training (EITs).

## **The Problem:**

The FBI currently has over 77 million individuals on file in its master criminal database - or *nearly one out of every three American adults*. That's more than the number of Americans who have obtained at least a bachelor's degree (70 million).



**We “transform the hustle” of people with criminal histories both inside and outside of prisons nationally.**



America keeps more people behind bars than the top 35 European countries combined. America has 5 percent of the world's population and 25 percent of the world's incarcerated population.

Between 33 million and 36.5 million children in the U.S. - *nearly half of U.S. children* - now have at least one parent with a criminal record.

## **Defy's Game Changing Solution:**

Defy Ventures transforms the legacy of



Words you live by?

**Why not?**

Favorite app?

**Seamless and Evernote**

Last book read?

**Gertie's Ultimate Dress Book:  
A Modern Guide to Sewing  
Fabulous Vintage Styles**

Mentor or role model?

**Seth Godin**

incarceration of generations of men, women and youth in America. We partner with progressive correctional leadership to provide an in-prison program called the CEO of Your New Life (CEO YNL), bringing Defy's entrepreneurship, employment-readiness and personal development training inside prisons and jails. In just one year, CEO YNL has been implemented in 18 facilities, with plans to serve 10,000 incarcerated people in the next three years.

Defy's high-quality coursework prepares EITs for re-entry and provides purpose to long-term inmates who become peer facilitators. EITs gain a tremendous sense of accomplishment when they complete the program and earn a Certificate in Career Readiness from Baylor University's MBA program. CEO of Your New Life brings hope to currently incarcerated men and women and reduces violence and disciplinary incidents. This reduction in

disciplinary incidents mirrors Defy's post-release success: 96.8 percent of Defy's released EITs stay free. Defy has incubated and financed 150 of their businesses after release, which have created 350 employment opportunities!

In 2016, Defy was awarded a \$215,000 grant from the California Department of Corrections and Rehabilitation to serve in three additional prisons. In 2017, we will continue to transform legacies of incarceration into legacies of entrepreneurship and success and further expand our work to other cities.

# EVOLVING COMMUNICATION



## Authenticity

By Jennifer Hopp

*Investor, Advisor & Entrepreneur*

Transparency and authenticity build trust. It is as true in business as it is in personal relationships. Yet, we often rely on carefully crafted messages that tell only part of the story; we only say what we think customers want to hear, rather than the raw truth. It is a practice that may yield quick sales at the expense of long-term loyalty.

This fact became most evident to me as the Founder and CEO of WeMakeltSafer, a technology company that builds applications for delivering safety information in the event of a product recall. Poorly handled recalls can destroy a company. Repeatedly, we found that companies weather the storm best when they react quickly and are open about what happened.

As customers increasingly demand this type of complete, transparent information, it is no wonder that communication platforms evolve to support more authentic relationships. We are moving

away from lengthy, edited prose, to short, imperfect, instantaneous messaging. We see marketing strategies transitioning from print articles and TV commercials to online advertisements; from tweets and image boards to six-second videos and single, in-the-moment snaps. Where once we only saw professional actors, we now see social media influencers. What comes next? Live streaming by the brands themselves, because it doesn't get any more authentic than live,

public conversations with your customers.

In July 2016, WeMakeltSafer was acquired by Bello-my Recall, and I am now spending most of my time on the

investment side of the tech-startup table. Here, I am witnessing this shift in communication firsthand as I started live streaming to help connect more startups from around the world with investors in Silicon Valley through live pitch sessions akin to Shark Tank, but with audience participation.



**Transparency and authenticity build trust. It is as true in business as it is in personal relationships.**







Words you live by?  
**If you aren't at least a little uncomfortable, then you aren't pushing yourself hard enough**

Favorite app?  
**Fitness Buddy**

Before I started, people told me that platforms like YouNow are for teens, and that live streaming, in general, is not the proper format for pitching. Yet, I saw teen-adoption as evidence of where communication is headed and, although the technology is not perfect, I believe it could fulfill a need for entrepreneurs who lack access to Silicon Valley. Many of us in the Bay Area take for granted how easy it is to talk with experienced entrepreneurs and investors. For startups in other regions, access to this valuable, often make-or-break advice is limited. Live streaming is a simple way to bridge the communication gap and foster innovation.

Now, hundreds of startups and dozens of guest investors participate in the live pitch sessions, with thousands of viewers "tuning in" just to be part of the tech community. In the end, what has made the broadcasts so popular is not that I

Last book read?  
**A Curious Mind**

Mentor or role model?  
**Michelle Obama**

am a tech influencer, but rather that the viewers see who I truly am, for better or for worse. I take questions live and give my honest opinions - I don't have time to craft perfect answers. Entrepreneurs, who I have never met in person, feel like they know me, which builds trust.

There is no hiding in live streaming, and viewers, like most customers, appreciate the transparency and authenticity that comes with it. The lesson in business and in venture capital is that, to attract and retain loyal customers in the future, we need to shed our fears of "realness" and avail ourselves of the tools that yield pure authenticity.

# DRIVING SOCIAL CHANGE BY MASS-PRODUCING *Empathy*

By Van Jones

*President and Co-founder, Dream Corps*

For people who believe in peace, justice and rational discourse, 2016 has been a brutal year. Terrorist activity escalated in Europe, while the Trump campaign coarsened political speech in the United States. Police violence against people of color and the assassination of police officers seemed to push the possibility of racial harmony over a far horizon.

How can we overcome what seem to be intractable differences between cops and communities, between whites and African Americans, between immigrants and citizens, between Muslims and those who fear Jihadists, between right and left?

**A major game changer would be the creation of a set of high-impact tools and initiatives that would engender “empathy” on a mass scale.**

A major game changer would be the creation of a set of high-impact tools and initiatives that would engender “empathy” on a mass scale.

Social scientists who study empathy find that the development of a true understanding of another person

inspires what they call “pro-social behavior.” Pro-social behavior is defined as actions taken to benefit others without the expectation of a benefit for yourself. It depends on a feeling of belonging to a common culture. Individuals who are pro-social believe that they are part of a community in which they can count on others to support them, love them and take care of them.

We need a large-scale effort to figure out what methods of building empathy work the best - and then deploy those in multiple ways.

One of the innovations that I am most excited about is virtual reality (VR).

Because it can help people see the world through the eyes of others, virtual reality has been dubbed the “empathy machine.”

People around the country, like those at the Stanford Virtual Human Interaction Lab, are using VR to help people



Words you live by?  
**Claim no easy victories**

Favorite app?  
**Fitbit**

Last book read?  
**The New Digital Age**

Mentor or role model?  
**George Lucas**

understand what it is like to be homeless. The goal is to create more humane social policies. Virtual Borders Arizona is using VR to bring people into the lives of immigrants chasing the American dream by crossing the Arizona desert.

The Guardian created a VR experience that helps one feel what it's like to be in solitary confinement in a prison in the United States. The New York Times created a VR experience that (among other stories) helps one experience the life of a child refugee fleeing war and oppression.

We need to reach people's hearts, not just their brains. That's what empathy is all about.

Engendering empathy is an important first step. It then needs to be followed up by something pro-social to do - work for more humane treatment of prisoners, immigration reform, housing solutions, etc.

At the same time, we need smart, proven solutions. To move from novelty item to impact, empathy-building efforts need to be married to large-scale initiatives to line up financial incentives in ways that move America in a positive direction. Luckily, all of the needed answers already exist; America is a massive social innovation laboratory.

If empathy is the key to healing these divisions, perhaps 2017 will be the year that those who seek justice begin to consciously use virtual reality to change social and political reality.



# Every Business Must Be a DIGITAL BUSINESS

By Chet Kapoor  
CEO, Apigee

The economics of digital leverage are changing the game. Cloud removes friction from access to compute cycles and data storage, reducing costs and accelerating time to value for those who make the most of it.

Connected products and services built to become more valuable with every interaction harness demand side economies of scale - "network effects" - to supercharge growth.

This gear chain of lower friction and faster growth propelled companies like Amazon, Uber and Netflix to iconic status and impressive valuations.

Due in part to their reach, as consumers we have come to expect smart experiences. As a result, the market increasingly demands digital-native growth curves. So enterprise IT can no longer afford operating with pre-digital friction.

In 2017 "meshing the gears" will become table stakes for competitiveness.

At Apigee, our mission is enabling every business to be a digital business. We see APIs as foundational for both connected products and services and cloud compute resources - and therefore the linchpin of the virtuous cycle of digital leverage.

More than profitability and growth at individual companies is at stake. Because modern web APIs facilitate "mashing up" assets across ecosystems, the more organizations - commercial, nonprofit, and public sector alike - that master using them strategically and at scale, the more valuable the entire network becomes.

**Enterprise IT must adapt.  
The pattern for success  
is clear.**

When we reach a "new normal" of ubiquitous cyber-physical experiences and machine learning, we believe use cases like the Industrial Internet or Smart Cities will prove that even trillion-dollar forecasts for efficiency and productivity gains are underestimates. But pre-digital culture, processes and tools won't get us there.

Enterprise IT must adapt. The pattern for success is clear. Technology teams in



Words you live by?  
**Like Water**

Favorite app?  
**Waze**

Last book read?  
**Shoe Dog**

Mentor or role model?  
**My father**

100-year-old companies that embrace this imperative are working today not as order takers, but as orchestrators in elastic IT environments where multi-cloud compute and data resources are managed as APIs. They've turned the innovation funnel upside down, replacing death by PowerPoint with learning by doing: Continuous delivery subject to constant experimentation with DevOps discipline.

Every business leader must adapt as well. Supply side economies of scale - decreasing cost per unit as production increases - are a universal competency that permeates value chains.

Now increasing value as the number of users increases or demand side economies of scale must become just as pervasive. Managers must be equally skilled at leveraging APIs to make their product or service more valuable as more people use them through:

Data network effects, where data and machine learning make them smarter; "Same side" network effects, where users attract users;

"Cross side" network effects, where different types of users (such as end-users and app developers) attract each other.

Nike, Walgreens, GE and many others are leading the way. They aren't just for digital natives anymore. Ordnance Survey, Britain's mapping agency, was founded in 1791. Completing its first comprehensive map of the island took more than 50 years. Today it surveys all 243,241 square kilometers and makes up to 10,000 updates daily. Developers can access this once unimaginably rich data through open APIs.

Ordnance Survey used digital leverage to change their game. Make this the year you join them.

# WINNING THE FUTURE.

By Ron Kind

*U.S. Representative, D-Wisconsin*

There is no question that today's economy isn't the one I grew up in. And, it won't be the one my grandchildren grow up in either. In the past two decades, the Internet and a rapid boom in technology have forever changed the shape of our economy. Americans have seen the immense benefits these technological advances have had in their everyday lives. However, more and more Americans are concerned about what these changes may mean for their place in the economy.

America's changing economy will be a game changer in 2017. Today's America requires efforts to find the most innovative, effective solutions for adapting to these economic changes.

I serve as Chairman of the New Democrat Coalition, a group of 52 democratic, pro-growth, innovation focused lawmakers, and through this have worked with other Members of Congress to help Americans win in the changing global economy. The New

Democrat Coalition is committed to seeking pragmatic solutions to help hard-working Americans compete in the increasingly globalized economy and ensure our families and communities are secure from threats around the world.

The New Democrat American Prosperity Agenda: Winning the Future outlines how we can grow our economy, preserve the American Dream and make government work better for the

people. These principles represent ideas anyone - Democrat, Republican or Independent - can support. We need bipartisan, commonsense solutions to keep

America the most competitive, creative and innovative country in the world.

New Democrat members supported the passage and implementation of The Jump Start Our Business Start-Ups (JOBS) Act to bolster new entrepreneurs trying to raise early-stage capital and have innovative ideas to help government



**We need to be  
legislating for the  
economy of the future,  
not the economy of 50  
years ago.**





Words you live by?  
**Go Pack! Go Badgers!**

Favorite app?  
**Yelp**

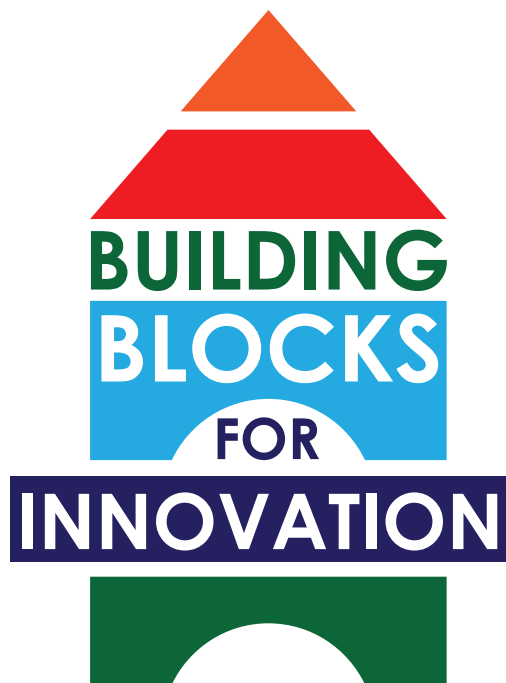
Last book read?  
**Franklin and Winston: An Intimate Portrait of an Epic Friendship**

Mentor or role model?  
**Senator Proxmier**

work better for the people, such as Yelp for Government, which allows federal agencies to set up Yelp pages to be more responsive to public feedback.

We need to be legislating for the economy of the future, not the economy of 50 years ago. This means identifying ways to make government more efficient and give all Americans the opportunity to succeed. We need to write the rules of trade to elevate standards by prohibiting the exploitation of child and forced labor while leveling the playing field for our workers, businesses and farmers. We also need to be investing in innovative policies that will help us maintain our status as a global leader in areas like developing groundbreaking technology and moving toward sustainable energy. On top of that we need robust investments in our transportation, energy and digital infrastructure.

Our workers have always been and will continue to be our country's greatest asset. With the economy changing we need to increase investments in education and job training programs so no one is left behind. Providing access to quality education is one of the best things we can do to reduce income inequality in our lives. We also need to pass comprehensive immigration reform to attract and keep additional talent we need to be competitive.



By Zoe Lofgren  
*U.S. Representative, D-San José*

Silicon Valley has powerfully rebounded from the greatest economic recession in decades and today is an unparalleled economic engine for the nation. This success is built on some of the same building blocks that gave rise to Silicon Valley - free and open minds, a robust immigrant community filled with new ideas, and science and technology unencumbered by politics or orthodoxy.

Are there threats to Silicon Valley? Digital encryption is under attack by law enforcement and intelligence communities. Our immigration system remains profoundly dysfunctional for Silicon Valley families and businesses. And Republican lawmakers on the House Science Committee have intimidated scientists who publish work they find threatening to Republican political dogma.

While fighting off attacks on the building blocks to innovation has long been a staple of my work in Congress, I want to build a lasting governing coalition to help right these wrongs. I plan to be a

part of bipartisan consensus to establish that encryption should be freely deployed to keep Americans safe. I plan to lead efforts to allow immigration for our nation's families and our economy. And I plan to insist that science is no place for partisan, political fights. Doing so would be a game changing turn of events, not just for the future of Silicon Valley, but for the whole nation.

While the prospects of passing comprehensive reform hinge on the outcome of November's elections, the nation's immigration system today does Silicon Valley few favors. It's harmful to businesses and families alike. Silicon Valley's ability to welcome immigrants and new cultures into our workforce brings new ideas and fresh perspectives, challenges norms and advances new ways to tackle old problems. Many immigrants who come to the Valley are highly educated and skilled. As a group, they are more than twice as likely to start a business as native born Americans. Many of these businesses are wildly



**The nation's immigration system today does Silicon Valley few favors.**







Words you live by?

**Don't wait to be appointed,  
just do what needs doing**

Most used app?

**Pocket**

successful, like Intel, Google, Yahoo and eBay - all of which were founded by innovative immigrants. To continue building the success stories of the future, we must make necessary changes to fix our broken immigration system. I plan to lead that effort in Congress.

Innovation needs researchers, scientists and entrepreneurs who are free to pursue their ideas openly without fear of retaliation. Right-wingers in Congress and fossil fuel industrialists have attacked and intimidated academics, scientists and students. The release of fetal tissue researchers' personal information has put their safety at risk. Over-zealous Congressional committees have subpoenaed climate change scientists for publishing research that runs contrary to climate change deniers. The public misinformation campaigns denying science and obfuscating legitimate research is not productive. Silicon Valley knows that

Last book read?

**Blackout**

Mentor or role model?

**Mary B. Emery, Dean at  
Santa Clara Law School**

true science has no politics or orthodoxy. For the sake of our technology and innovation future I hope we can claw our way back to nonpartisan science.

Innovation requires secure software and hardware - safe from bad actors that will exploit weaknesses and steal information. In my role on the House Encryption Working Group, I hope to keep leading all members to the conclusion that technological reality and common sense dictate uncompromised encryption.

Silicon Valley became an economic powerhouse for many reasons. But more remains to further spur our innovation economy. To continue building our innovation-based economy, it is vital that we bolster and improve on the underpinnings and building blocks that helped us achieve such stunning success in the first place.

# The Innovation Initiative

By Kevin McCarthy

*House Majority Leader,  
U.S. Representative, R-Bakersfield*

In today's globalized world, "disruption" has become synonymous with "opportunity." When we challenge the status quo, we create new and more efficient ways to work, learn and interact with each other. These developments, like past eras of technological change, showcase American ingenuity at its best.

People can learn skills to compete in a more digitized workforce anywhere with an Internet connection. Entrepreneurs and risk-takers have expanded access to capital to start businesses. And lending for home improvement projects or college tuition can now be obtained through peer - to - peer actions online.

The forces that power our lives are changing every day. We know this better than most because Silicon Valley has been the epicenter of this disruption.

However, these technological advances have created societal and economic challenges for millions of Americans and their communities who feel they have been left behind and that their government isn't listening. One of the great public policy priorities of our time is to harness this technological disruption for the betterment of every American - to expand prosperity to every corner of our country.

There are major structural changes that

need to be made to encourage this to happen - tax reform, regulatory modernization and much more. And while these big issues have too often flummoxed both sides of the aisle, I have been working alongside House Speaker Paul Ryan to make meaningful progress.

That is what the House has been working on for months through our "Better Way" agenda.



**These technological advances have created societal and economic challenges for millions of Americans and their communities who feel they have been left behind and that their government isn't listening.**





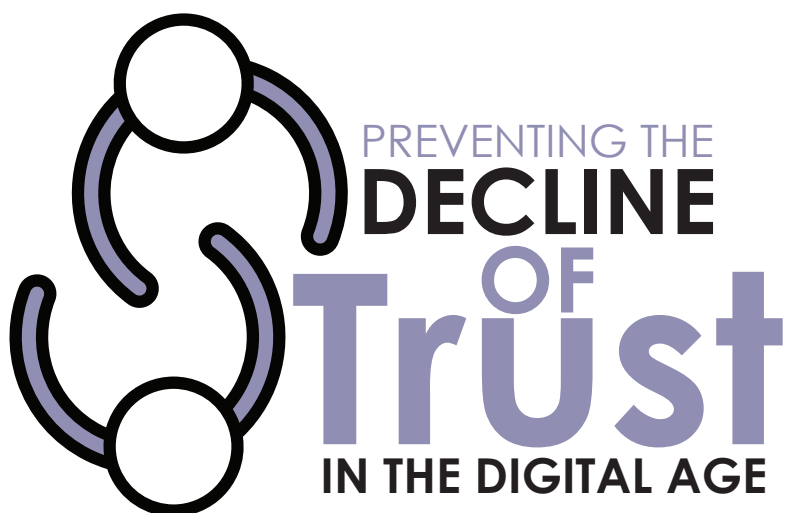
An important part of these bold ideas are solutions for a more innovative economy, government and society for all. Earlier this year, Representative Patrick McHenry (North Carolina) took a trip with me to Silicon Valley to meet some of the innovators that have created positive disruption in our lives. Upon our return to Washington D.C. we created a legislative agenda called the Innovation Initiative. Our goals are two-fold: Remove government-made obstacles to innovation and bring government itself into the 21st century to make it more accountable to the American people.

We immediately got to work by putting bipartisan bills on the floor and passing them out of the House. Examples include an update to our email privacy laws that hadn't been touched since "Top Gun" was sitting atop the box office. We passed legislation to encourage the federal government to interface with cybersecurity startups. We have built on the success of the JOBS Act of 2012 by expanding the ecosystem of crowdfunding. And we have voted to increase broadband access to rural areas. All of these bills passed with strong vote margins, reflecting the

bipartisan support for many of these commonsense advances in our laws and government.

The Innovation Initiative is focused on results that make sense, achieving what we can today so that America remains a global leader in innovation in the 21st century.





By **Mark McLaughlin**  
*Chairman and CEO, Palo Alto Networks*

At the World Economic Forum Meeting in Davos, Switzerland earlier this year, leaders from around the world gathered to discuss one thing: The amazing impact of our digital age, the so-called "Fourth Industrial Revolution." The importance of digital infrastructure to modern society could not be more apparent, as every topic and leader somehow touched on the great benefits achieved so far during this digital age. However, participants also acknowledged that our increasingly networked society presents serious risks.

We often hear of the possibility of major catastrophic events that would produce a "very, very bad day in cyber," but the

actual, growing concern is a more subtle bleeding of trust. Therefore, it is our collective responsibility to ensure that we work to prevent this decline in trust and preserve the benefits we gain from our digital way of life.

If we had to abandon digital systems

due to a growing lack of trust, we would see a huge step backward in productivity and one of the fastest declines in GDP in history. There is evidence this may already be happening.

As cyberattacks become more successful, the U.S. Department of Commerce has found that "Americans are increasingly concerned about online security and privacy," and that "these concerns are prompting some

Americans to limit their online activity." Their analysis found that 45 percent of those surveyed said these concerns "stopped them from conducting financial transactions, buying goods or

services, posting on social networks, or expressing opinions on controversial or political issues via the internet."

This issue of trust is why we see cybersecurity getting so much interest today. From White House summits to standing corporate board committees, the



**it is our collective responsibility to ensure that we work to prevent this decline in trust and preserve the benefits we gain from our digital way of life.**





Words you live by?  
**Duty, Honor, Country**  
**(West Point Motto)**

Favorite app?  
**Orvis Fly Fishing**

erosion of trust in our digital infrastructure transcends technology. Moreover, the matter is only getting more complex as tectonic shifts in technology, like mass data aggregation and the limitless nature of computing power, drive innovation as well as new risks.

If we are going to maintain the trust in our digital infrastructure, we must focus on regaining leverage from attackers by making it more expensive in terms of resources, time and personal impact to launch a successful attack.

This leverage should be built on three goals:

First, as a security industry, we have to focus on preventing successful cyberattacks. To this end, technology must be natively built to automatically prevent known and unknown threats, instead of simply telling you about a problem.

Last book read?  
**This Kind of War, History of**  
**the Korean War**

Mentor or role model?  
**Dan Warmenhoven, former**  
**CEO and Chairman of Netapp**

Next, we should share cyberthreat intelligence in an automated manner across all our industries in a way we can quickly use to realign our defenses against new threats.

Finally, we have to double down on increasing cyber awareness and education for our employees, children and ourselves to reduce human vulnerabilities and ensure we are growing the next generation of cyber-savvy citizens.

Not all of us have to be cybersecurity experts, but we do have to be aware of the impact these digital systems can have on our customers, services and missions. Taking a longer view of the threat, with the combination of next-generation technology and our joint efforts, we can vastly reduce the number of successful cyberattacks and restore the trust that supports our digital way of life.



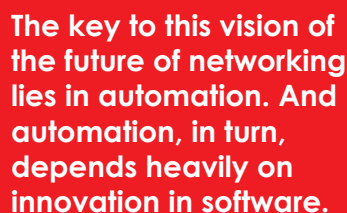
# Evolution or Revolution of Networking?

By Rami Rahim  
CEO, Juniper

Today's internet far exceeds the initial vision of DARPA communications in 1962. Since then, we have experienced exponential advancements in computing, storage and networking, resulting in a global web of connections between billions of people, and even more things and machines.

While machines and people are fundamentally limited in their capabilities when acting alone, there is virtually no limit to what's possible when we connect machines and people together, accessing and exchanging data around the clock - and around the globe. The connection between billions of machines - a projected 100 billion by 2025 - and the connected global population is creating a new synergy, uniting the digital and physical worlds. The universal network that forms these connections is the single greatest vehicle for knowledge, understanding and human advancement that the world has ever known.

The networking industry has gone through several major transformations in the past few decades. In the 80s, TCP/IP was recognized as the single unifying network protocol for all communication. In the 90s, high performance purpose-built silicon enabled networking at Internet scale for the first time. The next frontier of network innovation lies in software. Simply stated, our future of ubiquitous connectivity, collaboration, and communication relies on network modernization - through software.



**The key to this vision of the future of networking lies in automation. And automation, in turn, depends heavily on innovation in software.**

This phenomenon of modernization, with a focus on software, exists throughout the progression of many industries. The auto industry is undergoing a very

big software-oriented transformation today with intelligent software enabling smarter vehicles. The effect of such a transformation should not be underestimated. Self-driving cars will ultimately change the landscape of cities by eliminating the need for parking lots and may result in thousands of lives



Words you live by?  
**Only the paranoid survive**

Favorite app?  
**1on1 App**

Last book read?  
**Rise of the Robots**

Mentor or role model?  
**My father**

saved a year by avoiding traffic accidents.

Just as there are self-driving cars today, there is a need for 'self-driving networks.' Such networks will self-discover, self-configure, self-monitor, self-correct, self-analyze, and self-optimize in ways that add tremendous value. That value will manifest itself in the form of tremendous cost-savings for those that operate large-scale networks and, more importantly, vast levels of agility in delivering new and innovative services over these networks. The key to this vision of the future of networking lies in automation. And automation, in turn, depends heavily on innovation in software.

Whether you consider the advantages of automation as an evolution or revolution in networking, the benefits will be undeniable and profound.

Networks have become more than a connectivity tool or technology - they are true business enablers. With the power of cloud computing, companies can now develop and scale new revenue opportunities more quickly and cost-effectively than ever. And yet, we are just scratching the surface of what's possible.

Our future is a blank canvas of opportunity if we can shift how we think and operate to challenge the way that things have traditionally been done. It's up to us to lead the software-driven network transformation and create a future where the modern network brings more people and things together in ways that we can only dream of today.

# SLEEPLESS IN SILICON VALLEY

By **Tomi Ryba**

*President and CEO, El Camino Hospital*

Throughout Silicon Valley, a good night's sleep has become a luxury, instead of a necessity. We sacrifice sleep to get ahead in our professions and to balance the pressures of an overflowing day. Sleeplessness in the Valley is an epidemic as employees work long hours, yet are expected to stay highly focused and creative. The complex demands of tech careers are such that employees regularly sacrifice sleep to achieve personal goals. The negative impact sleeplessness has on health, personal relationships and concentration is well documented.



**Sleeplessness is tied to higher levels of stress, depression, hypertension, heart and kidney disease, obesity, diabetes, stroke and suicide.**



six hours of sleep a night. The cost is high - over \$63 billion dollars annually in lost productivity in the U.S.

Employers also feel the pain as a result of the health issues associated with sleeplessness. Employees report feeling distracted and admit to procrastinating and making mistakes when they're tired. Sleeplessness is tied to higher levels of stress, depression, hypertension, heart and kidney disease, obesity, diabetes, stroke and suicide.

What can employers do to improve our 24/7 work culture?

What we may not know is just how many of our co-workers are suffering in silence. A 2016 Accountemps survey provided insight into the widespread nature of the problem. According to the survey, almost 75 percent of U.S. workers say they work while tired and a third of them say they do so very often, with 40 percent of us getting less than

- 1. Make meaningful changes.** Implement flexible schedules or provide nap rooms in the office. Determine specific hours/days when emails are not allowed. For instance, only urgent emails after 5:00 p.m. on Friday so that employees can "unplug" on weekends. Encour-





Words you live by?  
**Don't get too big for your  
britches**

Favorite app?  
**Shazam**

Last book read?  
**Into the Magic Shop**

Mentor or role model?  
**My mom**

age employees to take vacations on a regular basis.

**2. Lead by example.** Employees take their cues from managers, so model work/life balance and avoid an "always on" mentality. The "open door" policy was never intended to be 24 hours a day. One employer banned interns from sleeping overnight at the office.

**3. Provide education and resources.** Employee Assistance Programs (EAP) offer tools to educate employees about sleep deprivation and assist them in getting a good night's sleep. Our EAP, called CONCERN, offers interactive apps to assess sleep habits, design personalized plans, and provide tips, exercises and music to improve sleep. One large employer holds quarterly "Sleeposiums" led by sleep experts, and another

offers free "mindfulness" classes to all employees.

**4. Cover the Cost of Medical Interventions.** Sometimes, the problem becomes severe and a clinical evaluation is needed. Covering the cost of a sleep study and treatment by a sleep clinic through your health plan makes sense. Treatment can include cognitive behavior therapy, technology to assist sleep, medication, and surgical or dental interventions.

As business leaders, we must challenge each other to find and share creative solutions to the sleep deprivation occurring in Silicon Valley so our employees can live happier, healthier and more productive lives.



By **Libby Schaaf**  
*Mayor, City of Oakland*

Oakland is a diverse city, with a rich cultural history and a growing economy. However, too many Oakland families are stuck at the margins of opportunity. Nearly 20 percent of Oakland residents live at or below the poverty line. Additionally, only 10 percent of students who start 9th grade will complete college within five years after high school graduation.

The Oakland Promise, launched in January 2016 by Oakland Unified School District Superintendent Antwan Wilson and I, in partnership with other great Oakland organizations, seeks to change this. The vision of the Oakland Promise is a cradle-to-career initiative with the goal of tripling the number of college graduates from Oakland within a decade.

The Oakland Promise weaves together initiatives already in place as well as practices from across the country to focus on creating new and sustainable opportunities for populations underrepresented in higher education. Through birth, kindergarten, middle school, high school and college, the Oakland Promise will connect families to resources that will help them prepare and save for college.

There are four core programs within the Oakland Promise: Brilliant Baby, K2College, Future Centers and College Completion. Through these programs every baby born into poverty within 10 years in Oakland will have a college savings account, every public kindergarten student in Oakland will have a college savings account by 2020, and every public school student in Oakland will have access to a future center where they will receive college and career counseling, need-based scholarships, and support to ensure they graduate from college.

**The Oakland Promise  
will change the lives of  
thousands of children.**

When children know they have money set aside from an early age for

college, their family embraces college graduation as an expectation. Research shows that children from low-income backgrounds with \$500 in a college savings account are three times more likely to attend college and four times more likely to graduate. Furthermore, the children of college graduates are three times more likely to attain a college degree, thus interrupting intergenerational poverty.

We have the remarkable opportunity to transform opportunities for Oakland's



Words you live by?  
**Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has**

Favorite app?  
**See Click Fix**

Last book read?  
**The Circle**

Mentor or role model?  
**Angela Glover Blackwell**

children, and prepare a generation of students for success. With public and private investment to help launch this initiative, and partnership from philanthropy, the Oakland Promise will change the lives of thousands of children. To date, the Oakland Promise has over \$20 million in expected contributions over the first four years.

In 2016, every Oakland Public School kindergartener will have a college savings account of \$100 opened by the time they leave elementary school. Through the East Bay College Fund, we awarded 300 scholarships. At our two Future Center sites - Coliseum College Prep Academy and Oakland High School - there have been impressive gains. At CCPA, the high school graduation rate was over 90 percent, there were twice the number of UC applications, and 100 percent of Federal Financial Aid and Dream Applications were completed.

As a result of the Oakland Promise, every graduating high school student has their first semester free at Peralta Community College and access to college persistence support, including peer mentoring on campus and Beyond12's "My Coach" app, which helps students manage key deadlines. In addition, all Oakland students have access to over 20 partnerships with colleges, including numerous UCs, Cal State East Bay and six historically black colleges, to ensure Oakland students graduate.

The Oakland Promise will only succeed if the community owns it, and to date, we have over 500 individual champions - including 100 percent of the city council and school board, 100 organizational champions and over 50 funding partners. To get involved, visit [www.oakland-promise.org](http://www.oakland-promise.org) to support, volunteer and become an Oakland Promise champion.

# COMPUTE REINVENTED

By Meg Whitman  
*CEO, Hewlett Packard Enterprise*

It's human nature to find something that works and stick with it - to build on it and improve it until it finally reaches the limits of its performance. That's where we find ourselves today in computing. For 60 years, we've relied on a computer architecture built with microprocessors at the center. Moore's Law led to consistently smaller, faster and more powerful systems - from the computers in our data centers to the smartphones in our hands.

But we find ourselves with a looming problem. Our challenges are growing exponentially while our solutions are improving only incrementally.

Moore's Law is running up against the laws of physics, which will limit future improvements in performance and scalability. Data is exploding - getting bigger and more complex and changing too fast to move, integrate or easily understand. We're losing the security battle on many fronts as cyber-threats become more sophisticated and harder to detect. Data centers are big

energy consumers. In 2015, they used more electricity than the entire United Kingdom - a figure that could triple by 2020, according to a recent study in the journal *Challenges*.

To get ahead and stay ahead of these challenges, we need more than incremental changes. We need a new kind of computer - one that achieves both exponential increases in performance and exponential reductions in energy

consumption. This is something that Hewlett Packard Enterprise and others in high-tech and academic institutions have been exploring for the past few years. Our goal is to

reinvent the way we compute from the ground up.

Today's computers chop up data to match the limitations of the processor. But that's the wrong approach when the size and speed of data far outstrip the ability of processor-centric computers to turn information into secure, actionable intelligence. Instead, our



**Computational tasks that today require government levels of funding and legions of data scientists will be within the reach of almost anyone.**







Words you live by?  
**Run to the fire**

Favorite app?  
**Uber**

new architecture puts the data first in a new approach we call Memory-Driven Computing. This will enable us to derive insight from massive data sets in near real time.

Instead of storing data in many different layers, Memory-Driven Computing collapses memory and storage into one layer as fast as memory but as persistent as storage. Imagine a computer with hundreds of petabytes of fast memory that captures and remembers everything about an enterprise as it moves through time. Connecting memory using photonic rather than electronic networks will deliver massive bandwidth improvements using far less energy.

As with most big shifts in technology, creating a new computing architecture requires a community. The multiple software innovations that power Memory-Driven Computing - from operating

Last book read?  
**Playing to Win: How Strategy Really Works**

Mentor or role model?  
**Mentor: My mom**  
**Role model: Frank Wells, Disney**

systems to analytics - are being developed in the open so that our customers will be ready to thrive in a memory-driven world.

If we're successful, these innovations will fuel a significant increase in performance, efficiency, business insight and security. The problem of having to find power for thousands of new data centers will effectively disappear. Computational tasks that today require government levels of funding and legions of data scientists will be within the reach of almost anyone. And, in an increasingly data-driven world, we'll be able to solve challenges we can't even approach today. Memory-Driven Computing will serve as the foundation for new technology at every scale, from tiny Internet of Things devices, to the data center, to exascale supercomputers hundreds of times faster than anything that exists today.



# GAME2017 CHANGERS

Ideas, Innovation, Inspiration

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