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Supporting Enterprise Networks and Operating Environments

# SUPPORT

DECEMBER 2014

VOLUME 6, NUMBER 11

**NaSPA**<sup>®</sup>  
NETWORK AND SYSTEMS  
PROFESSIONALS ASSOCIATION



## Why Most Experts Fear for the Future of Technology

By Apek Mulay



## Message from the President



Greetings NaSPA members,

Amazing as it may seem, we almost have the year behind us and will be soon heading into 2015. What will the new year bring to all of us in the way of technology and new opportunities? If you want to have a little fun, rent the movie “*Back to the Future II.*” In a funny kind of way it puts our technology expectations in perspective. It was made, as I recall, in 1985.

In the movie, the main character, 17-year old Marty Mc Fly transports to the year 2015 and sees himself as a 47 year old man. So how does the movie stack up with the real 2015? Well, for starters, in the movie the phone rings and the two kids say, “Dad, it’s Needles” without answering the phone. The Millennials among you may not get it, but there was no Caller ID to speak of in 1985. Today it’s ubiquitous. We also see Marty take calls on a 60” TV screen and speak with his friend and boss. Today, things like Facetime and Go-to-Meeting abound. There are some differences though. (Or ARE there? – Amazon is experimenting with drones that will do things like deliver packages.) Anyhow, maybe I am too easily amused but I find it interesting to look back on predictions about technology and see which ones actually came true. I also wonder what the next 30 years will bring and what we will see in the year 2045?

It’s gratifying to think that NaSPA members have played a part in the innovations of the last 30 years, I mean, NaSPA is 28 years old now and we have, and have had, many thousands of members. The tradition continues. For starters, if you want to see a very forward thinking piece that provides a glimpse of the next 30 years, read the article about Quantum Computing by Bill Elder. It is one of the best I have seen, and it fires the imagination. There are some other goodies in this edition that are equally enjoyable, in fact, this is one of the best monthly editions I have seen. What a great job Sharon, Michelle and contributors!

Finally, last month I put out a call for Ham Radio Operators. Thanks for the response! In case you missed it, I mentioned that NaSPA ‘s founder Scott Sherer, your Editor Sharon Wrobel, and yours truly are avid hams. Based on the response to our “CQ” we will be hosting a radio network in the near future to build awareness of NaSPA. If you are a licensed amateur radio operator, email me for more information. I’ll keep everyone in the loop as things come together but for now, IT’S ON.

Thanks to all of you who contribute to a strong and vibrant NaSPA, in so many ways. We extend the kindest wishes to all of you for a happy, prosperous and blessed New Year.

Leo A. Wrobel, President  
Editor in Chief Technical Support Magazine  
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**technical**  
Support Magazine  
**SUPPORT**

**NaSPA**

December 2014  
Volume 6, Number 11

Published exclusively for NaSPA, Inc.  
Network and Systems Professionals Association

[www.NaSPA.com](http://www.NaSPA.com)

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# Biometric Signature Authentication: The New Modality of Choice for Safe Guarding EMR Access

By David Rizzo

*Ease of use, 99.97% specificity, and cost-effectiveness assure compliance with HIPAA and HITECH Regulations*

Meaningful use. Two words of towering importance that now remind every hospital administrator, CFO and medical group CEO that they must comply with newly promulgated regulations from federal Health Insurance Portability and Accounting Act (HIPAA) and Health Information Technology for Economic and Clinical Health (HITECH) legislation, or risk forfeiting funds previously received from the Center for Medicare and Medicaid Services.

But while emphasis originally stopped at the word “meaningful”—as in, is the Electronic Medical Record (EMR) system being employed as demanded by law—greater emphasis now lands squarely on the word “use”—as in, will the physicians, paramedical staff, and record keeping and insurance-billing departments actually use the EMR as required? After all, what good is any electronic system if the user experience suffers?

With the recent introduction of biometric signature authorization systems that users effortlessly manage on their existing smart phone, tablet or desktop, the second half of the equation can now be solved. At the same time, the latest iterations of biometric signature authorization meet the “meaningful” needs of the medical organization by abiding by the letter of the law through gate-access specificity approaching 100%. The fact that these new systems reside “in the cloud” outside of the company’s business system, and require absolutely no additional cash-outlays for hardware, tag them as a cost-effective option for compliance.

## Play or pay

By now, the entire medical community understands the consequences of failing to employ meaningful use and safeguard the access to personal health information. Federal law (42 USC § 1320d-5) puts teeth into this message by imposing stiff penalties that start at a minimum

\$100 per violation and balloon to \$50,000 per violation with an annual maximum of \$1.5 million.

Acting as watchful sentinels to any EMR system are the access portals. When they fail, the entire system is compromised. In March, 2012, hackers managed to steal the medical records, including social security numbers, of 280,000 patients seen by the Utah Department of Health. The breach occurred at the password authentication level.

“Most of the administrators I speak to tell me that their biggest fear is having their organization’s EHR system compromised,” says Jeff Maynard, CEO of Biometric Signature ID, based in Lewisville, Texas. In excess of 80 clients and nearly 2 million users in all 50 states and approximately 60 countries currently utilize the company’s biosignature software. “The stakes have been upped by the HIPAA and HITECH acts. When you allow unauthorized access, you can be held personally liable for the fines, as well as the organization.”

To ligate breaches to the system, and stop hemorrhaging at the bottom line, healthcare portals must meet several criteria. Among them: a) ensure that first time users are who they say they are; b) secure access by physicians, nurses, etc. to clinical applications that contain patient data; c) secure access by payees and other third parties; and d) secure any session both before and after login.

CFR 45, Section 170.314(d)(1) sums it all up—the system must verify against a unique identifier (e.g., username or number) that a person seeking access to EHR is the one claimed.

## Finding a secure solution

A number of identification-checking modalities currently exist, falling into three basic categories: 1) something only (presumably) the user knows, such as a PIN or password; 2) an item the user has in his or her possession, such as a proximity card, flash drive or a token that provides random authentication codes; and 3) biometrics, something physically unique to the individual. However, the challenge begins at this point.

The failure of relying on something the user knows has become all too apparent. Cybercriminals have repeatedly proven the ease of cracking passwords and PINs. Secondly,

requiring a user to possess a verification tool, like a flash drive or proximity, entails the cost of purchasing, producing and distributing the necessary hardware. Of even greater concern, such devices do not necessarily authenticate the individual. They only verify that a person has possession of the device or card.

Which leaves biometrics. Examples include fingerprints, iris scans, facial recognition, DNA sequencing and, at the “bleeding” edge, vein scanning. While these may offer near-absolute verification, this type of identification requires a sophisticated, expensive, hardware device to capture and interpret the biometric patterns.

Obviating the need for a hospital to purchase a scanning device for its medical staff and other employees, Apple® has brought fingerprint scanning to the personal smartphone in the form of its Touch ID™ application; but not without its share of flaws.

“Fingerprint scanning seems convenient, but will lead to many cases of blocked access, especially in a clinical environment,” notes Maynard. “Antibacterial hand creams, powder from latex gloves, etc. will dirty the screen and reduce accuracy down to as low as twenty or thirty percent. If authorized users can’t access the system, they will rebel and refuse to use it.”

As a subset of biometric physical qualities, dynamic (AKA behavioral) biometrics offers the possibility of more accurate identification with less false negatives. Among the already proven types is “finger writing,” a type of gesture recognition verification.

Here, identification is accomplished in seconds by having medical personnel handwrite four letters or numbers within a confined space on a webpage by moving their mouse, stylus or dragging their finger across their smartphone screen. The software assesses the unique pattern of length, angle, speed, height, number of strokes and stores the information in an encrypted database. This data is compared to patterns collected by the user’s subsequent logins, confirming that the person who registered is the same person trying to access the account.

In independent testing by the Tolly Group—a leading global provider of testing and third-party validation and certification services to the Information Technology industry since 1989—the BioSig-ID™ gesture recognition

system was found to be 27 times more accurate than keystroke analysis reported in earlier evaluations. Observed confidence ratings at 99.97% meant that the false positive level of this particular software was three times better than guidelines put out by National Institute of Standards and Technology.

### **But will they use it?**

Accuracy aside, the payoff to such systems is its ready adoption by medical staff.

In fact, its very accuracy helps ensure acceptance because of the lack of false negatives. Additionally, since the reader is virtual and resides “in the cloud,” even users who do not have a smartphone can access it from any tablet or desktop computer, making it instantly and universally available.

It is all about the user experience and flexibility according to Maynard. Experience surveys report a 98% positive rating from users with many even reporting that it’s ‘fun.’

“Taking it one step further, in terms of timesaving and convenience, with our mobile app a user need only acquire authentication via his or her biosignature once. Upon which the system can be set up to respond with a RSA (Rivest, Shamir, & Adelman) style key code, QR (Quick Response) code or even NFC’s (Near Field Communication) that land in their smartphone,” explains Maynard. “From that point on the user can employ that code as a ‘key’ to access the facility’s EHR (Electronic Health Record). The duration of the key’s access rights is configurable from groups to individuals.”

Since one of the biggest concerns today is how to manage and secure personal devices, BioTect-ID™—using BioSig-ID biometrics—was created to lock down mobile devices, tablets and workstations to further prevent un-authorized access and data breaches.

Through easy and convenient, yet secure, access to medical records, applications, and even physical corridors, physicians and staff can accomplish their assigned tasks without fear of violating the law and incurring risk to the facility.

Recognizing these advantages, leading healthcare and enterprise companies like Epic and Ping Identity have already moved to integrate with Biometric Signature ID.

### Covering future contingencies

New rules issued last year by The U.S. Department of Health and Human Services further tighten the requirements for protecting patient privacy and securing their health information.

The Federal Regulations/Interpretive Guidelines for Hospitals (482.24(c)(1)(i)) require that every entry in the health record should be authenticated and *traceable* to the author of the entry. Hence, any authentication system must incorporate some method of tracking.

“A good biosignature system can provide an audit trail including the time, date, physical location, history and even the ISP/IP address of a user who signs in for any medical record or through a portal,” explains Maynard. “Through continuous data mining we have developed risk scoring algorithms that uncover fraudulent activity. Examples include, comparing the history of IP address, ISP’s, accuracy levels, password resets, validation attempts and more data that point to atypical behaviors. We can set up certain alerts and bring this information to the attention of the medical institution.”

Industry accepted application program interface standards like SAML 2.0, SSO-IO communicate with the business systems of the medical enterprise to allow seamless exchange of such tracking information.

The ability to provide evidence of all the events surrounding the authentication activity not only provides a powerful tool to combat fraud, but also ensures compliance with evolving regulations that portend to mandate even stricter standards of identity authorization within the healthcare industry. Leading healthcare and enterprise companies like Epic and Ping Identity have already seen the handwriting on the wall, and have integrated with Biometric Signature ID.



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### About the Author

*David Rizzo*

*Torrance, California-based author David Rizzo has penned three trade books, 200 technical articles*



*and 500 newspaper columns. Rizzo covers a wide range of topics, specializing in technology, medicine and transportation.*

*For more information, contact Biometric Signature ID at 708 Valley Ridge Cr., Suite 8; Lewisville, TX 75057; (877)700-1611. To conduct a “test drive” using biosignature technology, visit [www.BioSig-ID.com](http://www.BioSig-ID.com).*



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# Quantum Computing – Fact or Fiction?

By Bill Elder with Jeremy Hilton

***“You don’t understand quantum mechanics, you just get used to it”*** *Richard Feynman*

Mention Quantum Computing and you will get opinions about its promising emergence while others will say that this new type of computing will never happen in our lifetime. Only time will tell. In the not too distant future, some of today’s supercomputers could become as obsolete as the typewriter or telegraph machine. We will explore some of the interesting facts about what’s happening in Quantum Computing and speak with industry spokesperson, Jeremy Hilton, about this new technology.

## What exactly is Quantum Computing?

According to the Institute for Quantum Computing, this new technology is defined as “computing that is essentially harnessing and exploiting the amazing laws of quantum mechanics to process information. A traditional computer uses long strings of “bits,” which encode either a zero or a one. A quantum computer, on the other hand, uses quantum bits, or qubits. What’s the difference? Well a qubit is a quantum system that encodes the zero and the one into two distinguishable quantum states...”

The Institute for Quantum Computing has a lot more detail and provides a thorough overview of tying together quantum mechanics and computing.

Below is the website for a more complete definition – <https://uwaterloo.ca/institute-for-quantum-computing/quantum-computing-101>

From the Quantum point of view, today’s computer systems (known as classical) store all of its information as bits that can only be a 1 or a 0. Classical systems process items (known as bits) one at a time in linear sequence. The silicon chip that is at the heart of today’s computing systems is reaching a peak in its capacity. Soon, we will not be able to fit anymore transistors on silicon chips. We have come a long way in that we are now able to store up to 2 billion transistors on a single chip. However, the pace of technology change and increasing demand for processing will soon strain traditional silicon chips to full capacity.

Quantum systems in contrast can process multiple items at a time can be both 1 and 0 simultaneously. The main way this can happen is that quantum technology can use atoms as storage units of information and do simultaneous

calculations of multiple records. This breakthrough could someday address the upcoming processing limits of today’s computer technology.

## Quantum Computing in the news

This topic has recently become a popular focus in the media. Google has recently jumped on the Quantum Computing bandwagon. In fact, Google is planning to build its own quantum computing system. A recent Technology Review article, “Google Launches Effort to Build Its Own Quantum Computer”, makes an interesting point that a quantum computer could someday solve problems that would take a conventional computer millions of years to accomplish. Not just a million but millions of years. This truly puts any of our personal problems in an interesting perspective. The article features a partnership between Google and D-Wave Systems, a firm we will feature later in this article. There is currently quite a bit of debate about whether a commercially available quantum computer is viable which is discussed in this article. It is clear that Google sees the possibilities and will be interesting to watch.

In another Technology Review article, “The CIA and Jeff Bezos Bet on Quantum Computing” illustrates the notion of following the money. Jeff Bezos, the CIA’s investment arm, In-Q-Tel, and other investors are making a \$30 million bet that this new technology is not only feasible but will be soon commercially available. Potentially this new technology could overcome obstacles in building sophisticated artificial intelligence systems. Later in the article Lockheed Martin paid \$10 million for a computer for research into automatically detecting software bugs in complex projects. One interesting fact noted in the article is that part of the facility housing this new technology requires extremely cold temperatures at -452 °F. The article ends on an interesting note in that current chip technology is reaching a critical mass as we described at the beginning. As noted “Many of the regular advances in computing power have come from connections on chips shrinking year after year, but with leading chip maker Intel currently working on making them just 14 nanometers across, things can’t get much smaller. “We’re living in the last 10 years of exponential growth of [classical] computing power, and alternatives to that will become more of interest....”

## Fun and Interesting Facts about Quantum Computing

There are a couple of websites about quantum computing that will be only described as mind blowing. On the website [businessinsider.com](http://businessinsider.com), there is a feature titled “9 Facts about Quantum Computing That Will Melt Your Mind.” For example, there is some uncertainty about what actually



happens inside a quantum computer since the particles storing the information are altered once they come under observation. Some scientists even speculate that quantum computers are running calculations in alternate universes. Below is a link to the article -

Read more: <http://www.businessinsider.com/what-is-quantum-computing-2013-7?op=1#ixzz3JZHBUhbZ>

“The Top 6 mind-blowing Interesting Facts about Quantum” found on the website [techmcsquare.blogspot.com](http://techmcsquare.blogspot.com) has some amazing facts about this promising new technology. Did you know that quantum computer could potentially reduce power usage by a factor of 100? Implementing these types of computers would have significant impact on energy usage at major data centers. Quantum computers will be able to solve complex optimization problems that are overwhelming for conventional problems.

Read more: <http://techmcsquare.blogspot.com/2013/11/facts-about-quantum-computers.html>

### **D-Wave Computer Systems Overview**

In this section, we will be interviewing D-Wave to gain more insights about the upcoming commercialization of Quantum Computing. With locations in Vancouver, Palo Alto, and Washington DC, this firm is a major player in this exciting new arena.

We now have the honor of interviewing the staff of D-Wave to get their insights and predictions into the next chapters of this emerging new technology.

#### **1. How will this new technology impact the infrastructure of Data Centers?**

Moore’s Law and data centers are reaching their limits in terms of scale and energy consumption. There are problems that traditional computers simply can’t solve no matter how many transistors you add or supercomputers you connect. In light of this reality, quantum computing represents the next era of computing. When it comes to the infrastructure of data centers, quantum computing has a unique scaling property, and its power demands won’t increase as the computer scales to larger numbers of qubits -- quantum bits. We expect to see hybridized IT environments that incorporate quantum computing to meet the growing performance needs of large-scale enterprises while remaining within or even reducing power budgets.

#### **2. How can Quantum Computing make an impact in the telecommunications industry?**

Conventional computing is hands-down the best for processing vast amounts of data quickly. However, extracting meaning from all this data is the tricky part, and is very hard or even impossible with conventional computing. Industry experts call these intractable problems. Quantum computing promises to much more efficiently extract meaning from vast amounts of data, which can have a profound impact on a range of things like improved reception, optimized bandwidth, and disruption prediction and response. These amount to a significantly improved customer experience without adding complexity to the network or infrastructure.

#### **3. Many are concerned that more powerful computing power will lead to more invasions of privacy, what is your take on these concerns? What role is the Quantum computing playing in helping to protect privacy?**

It’s a natural fear, but not one that applies to our work at D-Wave. Our focus is not on security or code-breaking, but on applications that have a big impact on our society like health and finance.

#### **4. How could this new technology support Disaster Recovery?**

These days a big part of the challenge is just dealing with overwhelming amounts of information. Effective DR strategies have become about managing and interpreting incoming information and reacting accordingly to the very complex situations that unfold. Extracting meaning from this information is where quantum computing excels. The type of data interpretation and problem solving ability offered by quantum computing will prove invaluable to decision makers in emergency situations.

#### **5. People will still use classical computing devices but how will Quantum Computing modernize current and legacy large scale IT systems?**

We don’t expect quantum computing to displace all classical computing, or even all large scale IT systems. It will instead expand the limits of what these systems can hope to accomplish, and offer new ways to work on the most complex problems, by working side by side with existing computer systems to exceed previous capabilities. These two types of systems will likely be complementary for a long time to come.

#### **6. Quantum computing will no doubt impact the IT industry in terms of creating new jobs and eliminating others. In your opinion, as this technology emerges which types of IT jobs will be most impacted in terms of job loss?**

We’re building an entirely new technology, with immense promise. Rather than eliminating jobs, we’re looking at the creation of an entirely new sector.

#### **7. For those that want to train ahead for this new technology, what would you recommend as courses of action to take?**

For those interested in learning more about these technologies, I recommend obtaining a strong research background in university-level physics, computer science, and mathematics, with specialization in areas like statistics and machine learning, or low-temperature physics and superconductor-based integrated circuits. These areas provide a solid foundation for the kind of research we do at D-Wave Systems. One of our goals is to make quantum computing accessible more broadly through the cloud, and we envision a model where folks working in various industries with problems relevant to the system can work with quantum computing via the cloud. Developing the right kind of algorithms for these problems will take mathematical and industry expertise, so keeping track of those industries facing these intractable problems with big data is also a good idea.

## About the Authors

### Bill Elder

Bill Elder is a consultant who is employed by Knight Point Systems ([www.knightpoint.com](http://www.knightpoint.com)), a federal IT contracting firm based in Reston, VA. Bill is a certified software tester and a past member of NaSPA's Board of Directors. He is originally from Pennsylvania where got his Public Policy degree from Penn State University. Bill now lives in the Northern Virginia suburbs of Washington, DC.



### Jeremy P. Hilton

Vice President of Processor Development, Director, Intellectual Property @ D-Wave Systems – Jeremy Hilton joined D-Wave directly after obtaining his BSc. in Physics from the University of British Columbia. As Director of Intellectual Property, he was primarily responsible for managing the transfer of intellectual property from D-Wave's global collaborative network to D-Wave. In less than three years, he grew D-Wave's Intellectual Property portfolio from 13 to 126 patents filed. With his knowledge of the IP behind our technology, Mr. Hilton was a natural choice to assume responsibility for management of the processor development effort when D-Wave undertook the project to bring the ideas to fruition.



Since 2004, Mr. Hilton has led a team of engineers and scientists in D-Wave's Processor Development group, creating a world-class R&D facility and focusing their technical efforts on building the first scalable quantum processors in the world. He led the creation of the worlds' most advanced superconducting integrated circuit foundry, centrally managed in state-of-the-art semiconductor facilities in Silicon Valley, which produced the quantum processor behind D-Wave's first product and continues to push to unprecedented levels of integration. Projects have ranged from the design, modeling and testing of superconducting devices to the development of low-noise superconducting fabrication processes.

Mr. Hilton is a named inventor on 28 granted US patents. See more at: <http://www.crunchbase.com/person/jeremy-p-hilton#sthash.OAJ5Ufgk.dpuf>.

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# ACT Tool Guest Blog

By Vanessa Nudd

## *AWS re:Invent re:Cap and Cost Optimization through CMI's ACT Tool*

Last week our team had the pleasure of traveling to Las Vegas to attend re:Invent, Amazon Web Services' (AWS) annual global customer and partner conference. With over 15,000 attendees from over 60 countries and countless education seminars, technical bootcamps, riveting keynotes, and a buzzing expo floor, one message radiated loud and clear: 'Cloud is the New Normal' (Andy Jassy, Senior VP AWS). A series of exciting announcements over the week-long conference, in addition to numerous references of large clients going 'All-in' with AWS (Coca Cola, Major League Baseball, Conde Nast, etc), confirmed that AWS is truly ready for the Enterprise.

There were several recurring themes on the Expo floor. The first was centered around hybrid-cloud enablement – countless companies offering solutions that enable the automation, orchestration and management of workloads between on-prem and off-prem Clouds. This is an interesting and rapidly-changing space that includes the larger established players (ie. VMware, IBM, HP) along with several newcomers in the market (RightScale, Cliqr, etc). The focus of the newer players is to help clients design portable, multi-cloud blueprints and place workloads in the appropriate place based on security, cost, availability, or other technical requirements. Definitely an interesting value-prop, and exciting from a customer standpoint in terms of maximizing customer choice and flexibility.

The second trend involved improving cloud visibility and control, and optimizing Cloud spend. Many of our clients start off with a single AWS account and a relatively small manageable spend. Over time, additional accounts were added and suddenly management is receiving expense reports to cover thousands of dollars of AWS spend. When asked to produce detail behind the charges, a complex AWS multi-thousand line statement is provided. Suddenly what started small and isolated, is now out of control both from a governance and cost management perspective.

CMI recently announced a free toolset, called ACT, to address these issues. Through the ACT portal [www.cm-inc.com/solutions/act/](http://www.cm-inc.com/solutions/act/), clients can consolidate

## Control Your Cloud Spend



## The ACT Tool



[www.cm-inc.com/solutions/act](http://www.cm-inc.com/solutions/act)

AWS & SoftLayer accounts and access ACT's interactive dashboard, which provides drill-down usage details (by account, cost center, Resource IDs, etc). Clients will receive simplified monthly invoices with Net 30 terms, versus credit card payments, through the ACT billing portal. Also, clients will be able to establish account provisioning approvals workflows for greater control and governance.

Perhaps the most exciting aspect of ACT is its cost optimization feature. Through consolidated billing of accounts, our clients are able to benefit from otherwise inaccessible volume-tier discounts. In addition, ACT's built-in RI (Reserved Instance) Optimization tool automatically makes RI purchase recommendations, saving our clients an average of 20-30% off their monthly bill. Unlike AWS recommendations, which focus on the 'heavy' (most used) RIs, ACT recommendations evaluate opportunities to benefit from 'medium' or 'light' RIs, which can lead to greater costs savings and reduced risk. To identify additional opportunities for optimization, CMI will arrange a follow-up meeting after 30 to 60 days of ACT implementation to personally review data usage, billing, and



RI recommendations. Given AWS' mantra of "Customer Obsession", Business Level support is required for all ACT clients to ensure an optimal experience on AWS.

We hope that by offering ACT free of charge to our clients, CMI will remain a trusted adviser for future cloud architecture and service's needs. CMI offers a wide variety of value-add cloud services and solutions and our focus is on building productive, lasting partnerships with each of our clients.

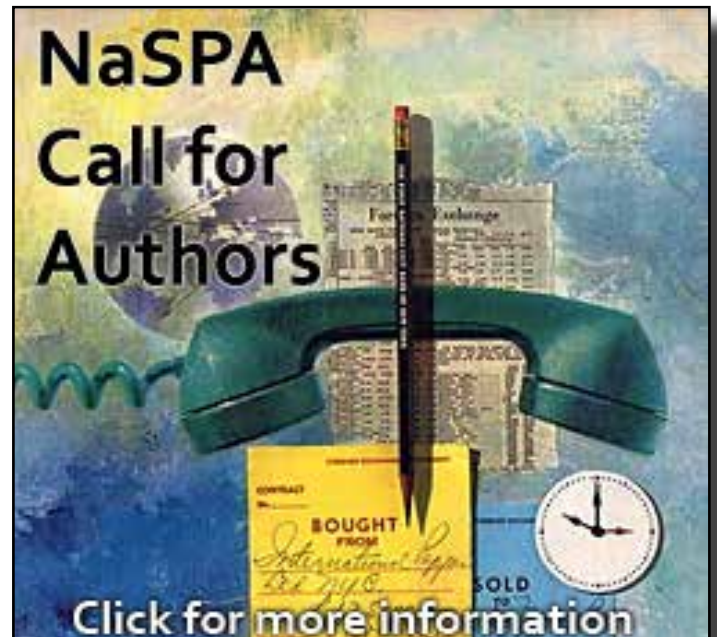
Registration for ACT simply requires a client's 12-digit AWS account ID and contact information. After registration information is received, CMI will request read-only authorization for billing data. CMI can then provide clients log-in information to ACT from the portal on CMI's website. Full access and utilization of the ACT tool will be made available just one or two days after registration. [Find more information about CMI here.](#)

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#### About the Author

##### ***Vanessa Nudd, CMI***

*Vanessa Nudd graduated from Washington University with a degree in Computer Science, and has been working in IT for the past 12 years. She began her career as a technical specialist in IBM's Systems & Technology group, and joined CMI in 2006 as a consultant helping Fortune 500 clients optimize their Enterprise IT. Vanessa now leads the Cloud Solutions practice at CMI, with a focus on guiding CMI clients through their Cloud journeys including planning & architecture design, migration, and final deployment.*



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# SNEAK PREVIEW OF JOB POSTINGS

## Members! Here is Your Special “Sneak Preview” of Upcoming New Jobs, posting soon on the NaSPA Job Site

*The following is a sample of the awesome jobs posted by employers in just the last 30 days on the NaSPA Job Site. NaSPA sincerely appreciates all the people who think of NaSPA first when they are looking for the ideal Information Technology candidate. They find the best people, and help NaSPA at the same time. These jobs have not hit our site yet so now you can have a “sneak preview” ahead of other applicants by virtue of your NaSPA membership. Visit the NaSPA Job Site right now and see what else is new!*

**Job Name** Manager of Success Center - Grant Funded  
**Position Title** Manager of Success Center  
**Location(s)** San Diego, California, United States

Responsible for managing the Pathways for Achieving Student Success (PASS) programs and supervising the SIP grant activities with an emphasis on compliance with applicable regulations and objectives. This position will provide oversight and development to the following retention programs: First Quarter Success Program (FQSP), Pathways for Success online modules and other retention initiatives. The Manager, in cooperation with the grant's External Evaluator, will be responsible for grant reporting, including the mandated annual and program evaluation reports detailing compliance with grant objectives, working in conjunction with Student Academic Success Center, advisors and faculty members. Please Note: this is a long-term Grant Funded position.

### Additional duties include:

- Work in conjunction with Student Academic Success Center, advisors and faculty members to include the development of remediation plans, the recommendation of learning materials, and the referral of students to appropriate resource persons.
- Develops implements and monitors Pathways for Success online modules for incoming students.
- Supervises, implements and monitors special SIP grant activities and ensure compliance with regulations for participation in grant-funded activities.
- Acts as an educational resource and advocate for low income students, at-risk and minority students.
- Assesses, monitors and evaluates the needs of the students who use the Program; develops appropriate initiatives to meet students' needs.
- Assesses learning needs of individual students and develops a plan of instruction based on assessment results.

**Job Name** Functional Analyst III  
**Position Title** Functional Analyst III - Grant Funded  
**Location(s)** La Jolla/San Diego, California, United States

As an integral part of the Student Services team, the Functional Analyst 3 provides complex business process analysis for functional support, implementation, development, modification, and maintenance of the Oracle/PeopleSoft Student Administration (SOAR) end-user system. The position builds and maintains expert level functional skills required to manage the most complex cross-functional SOAR projects; seeks out and participates in learning activities to enhance knowledge of application systems, software packages, and the industry; understands the professional development process and becomes actively involved by setting and meeting challenging goals. Please note: this is a longterm grant funded position.

### RESPONSIBILITIES:

- Functional project leader on cross-functional Oracle/PeopleSoft (SOAR) projects; May also serve as the Project Manager for isolated components of a larger project. Track progress and provide project status reports to all project stakeholders.
- Communicates with other functional departments, technology departments, end-users, and executive level management to maintain interdepartmental coordination. Lead and Facilitate Cross-Functional meetings.
- Provide strategic analysis and recommendations to decision makers throughout the University and the NU System.

**Job Name** APPLICATION DEVELOPER CONSULTANT  
**Position Title** APPLICATION DEVELOPER CONSULTANT  
**Location(s)** Boston, Massachusetts, United States  
**Description** APPLICATION DEVELOPER CONSULTANT: Expertise in JAVA, J2EE, JSP, UNIX/Perl, Ant, PL/SQL, Autosys, ClearCase, SCCS, PGP encryption, FTP, SFTP, NDM & FTPS required. Send resume to: Jim Connors, Connors & Associates Inc, 50 Franklin St., Boston, MA 02110

**Job Name** Systems Specialist-2  
**Position Title** Systems Specialist-2  
**Location(s)** New York, New York, United States

Mphasis Corp. has five (5) openings for the following full time (M – F: 9AM to 6PM) prof position at its office in NY, NY & unanticipated client sites in the US. Systems Specialist-2 – Design, develop, test & implement functional spec for software sys. Analyze business process to determine user's sys requirements, and provide solutions. Review requirement spec to determine feasibility of design. Develop s/w testing and validate procedure. Interact with project team and attend to ad-hoc issues related to day-to-day activities throughout project implementation and testing phases. Bach. in the field of CS, Comp. Application, Comp. Eng., CIS, Electronic Eng., Electrical Eng., any Eng. field, Math, Physics, or related field plus two years of exp in job offered, s/w consultant, s/w engineer, or rel work. Will accept a Bach. degree or foreign degree including combination of degrees equivalent to an U.S. Bach. degree as determined by professional evaluation service. Travel/relocation reqd. Wages: \$91,104/yr with standard emp benefits. Submit resumes to: Recruitment & Employment Office, Mphasis Corp, Attn: Job Ref #: MPH42879 PO Box 56625, Atlanta, GA 30343.

**Job Name** Twinspires1  
**Position Title** Sr. S/W Devlpr-FrntEndHTML5&JavaScriptApps  
**Location(s)** Mountain View, California, United States

Sr. S/W Devlpr-FrntEndHTML5&JavaScriptApps -Eval. front-end(FE) toolkits&tchnlgies comprng against currrnt framwrk to drive FE s/w desgn;Partcipate in devel.of the web UI framwrk for main consumr-facing websites w/perfrmnce, scalabty&maint. in mind; Prov.tech.leadrshp, mentrng&directn to FE enginrng vendr teams;Utiliz tools&framwrks for cont. qual&perfrmnce measrmt&scale thru devel.cycle;Help w/UI dsgn thru full lifecycl of projcts frm concept'n thru rollout wrkng w/var.functnl grps like ProdMgt,Ops,QA,CstmrSpprt etc;Create&maint high quality docs incl. featur specs,desgn specs,flow diagrms,site maps&procss diagrms; Wrk clisly w/Prodt teams to define bestUX;Enforc&augmnt devel.stndrds acrss the BusUnit;&perf.prodct evals&usabty test,communicate reslts&implicatns. Reqs: MS or frgn equiv.in CS or rel.field+3 yrs exp.in job or a cmputr-relatd job title OR BS or frgn equiv. in CS or rel.field+5 yrs'progrssve,post-baccalaurate exp in job or a cmputr-relatd job title; & Exp or Educ in HTML/CSS progrmng;AJAXweb app desgn utilzng HTML,AJAX, jQuery,Java Scrtpt,CSS,JSONonLAMPstacks;MVC&OO JavaScript progrmng&Agile. (Any suitable combo of educ.,training,or exp.is acceptable) Job inMountainViewCA\$131,269/yrM-F,8a-5p. Send resumes to Recruitment & Employment Office, Churchill Downs Technology Company dba TwinSpires (Employer), Attn: Job Ref#CHU47352, P.O. Box 56625, Atlanta, GA 30343



**Job Name** Programmer Analyst  
**Position Title** Programmer Analyst  
**Location(s)** Overland Park, Kansas, United States  
 CyberBrains Inc seeks Programmer Analyst: Develop Web Applications using .Net Framework 3.5, Visual Studio 2008 and SQL Server 2008 as backend database. Create Windows SharePoint Server (WSS) 3.0, Microsoft Office SharePoint Server (MOSS) on an open scalable farm architecture. Use Java, J2EE, Oracle. SharePoint 2010, and ASP.NET. Primary worksite is Overland Park, KS, but relocation is possible. Req: MS degree in Computer Science or Electrical Engineering. Must be certified as SharePoint 2010 specialist. 40hr/wk, 8am-5pm, Mon-Fri, \$103,958.00/yr. Send resumes to Recruitment and Employment Office, CYBERBRAINS INC, Attn: Job Ref #: CYB23400, P.O. Box 56625, Atlanta, GA 30343.

**Job Name** Title IX Coordinator/Associate Dean  
**Position Title** Title IX Coordinator/Associate Dean  
**Location(s)** Big Rapids Township, Michigan, United States  
**Description** Title IX Coordinator/Associate Dean – Ferris State University.

This person will be required to collaborate with a wide array of Ferris State University campus departments including but not limited to, Department of Public Safety, General Counsel, Student Conduct, Human Resources, Housing, Student Life, Health Center, statewide programs and Kendall College of Art and Design and community agencies regarding education about prevention of and response to sexual violence, harassment, stalking and domestic assault. Candidates must possess a Master's degree or higher from an accredited institution in student affairs, higher education, social work, counseling, criminal justice, or related field. Also must possess five years of full-time higher education experience with knowledge, training, experience related to Title IX, YAWA, conducting investigations, and other sexual violence, harassment, stalking and domestic assault prevention.

For a complete posting or to apply, access the electronic applicant system by logging on to <http://employment.ferris.edu>.

Ferris State University, an Affirmative Action/Equal Opportunity employer is committed to enhancing equity, inclusion, and diversity within its community. The University actively seeks applications from women, minorities, individual with disabilities, veterans, and other underrepresented groups.

**Job Name** ORA82802  
**Position Title** Technical Analyst Support (Database)  
**Location(s)** Redwood Shores, California, United States  
 Technical Analyst Support (Database) position available at Oracle America, Inc. in Redwood Shores, CA. Identify, analyze, and resolve tech'l problems related to Oracle software sys. Restore failed svcs and find workarounds to down user situations. Resolve unplanned outages for On-Demand customers, work on Disaster recovery tests for On-Demand customers, and participate in process improvement. Work with Oracle customers dealing with Oracle apps, databases, and UNIX fundamentals. Utilize working knowledge of Oracle apps, Oracle RDBMS in both single tier and multi-tier architecture. Work with New Technologies to provide Disaster Recovery solutions to new products. Requires Bach's degree in Comp. Sci., Engin. or rel't'd technical field, followed by 5 yrs of progressive, post-baccalaureate work exp. in job offered or 5 yrs of progressive, post-baccalaureate work exp. in a comp.-related occupation. Education or exp. must include: 1) Oracle Database Administration including performance tuning and database recovery; 2) Oracle Apps. (ERP); 3) Oracle iAS, Oracle Workflow, Discoverer; 4) EBSO Refreshes; 5) Design, implement and execute Disaster Recovery for database and Oracle apps; 6) Knowledge of Unix Shell scripting; 7) Linux, Solaris and HP-UX operating sys; 8) SQL Loader, Import / Export, Mysql and 9) knowledge of Netapps storage set ups. Any suitable combination of education, training, or exp. is acceptable. 8:00AM – 5:00PM, Mon-Fri; \$113,610.02 to \$173,048 /year, standard company benefits. To apply, submit resumes to: Recruitment and Employment Office, Oracle America, Inc., Attn: Job Ref #: ORA82802, P.O. Box 56625, Atlanta, GA 30343.

**Job Name** Manager-Systems Accounting  
**Position Title** Manager-Systems Accounting  
**Location(s)** New York, New York, United States  
 Manager-Systems Accounting, New York, NY: Ana fin info needs & review existing sys to meet needs W/design of new sys. Provide support for interface between business & tech/sys using PowerBuilder & Python. Implm change processes for development & change in IT sys & tech. Resp for Liaison W/ Banks, Accountants & External Bank Auditors, with respect to Financial Reporting on Borrowing Base Certificates, Annual Financial Projections, Bank Audits & other related reports. Responsible for admin of Financial Management System (FMS). Manage interface of FMS W/other sys such as AR, AP, & Payroll. Provide tech supp for admin of FMS, including changes, testing, & security structure & design of FMS. Plan & impl changes to FMS in chart of account, e-commerce, project accounting, payment, inventory, asset management, receipts & general reporting. Dev & maintain documentation & supporting flowcharts for FMS processes & procedures. Write database queries to extract & manipulate data to generate reports using MS Access, SQL & Python. MS (BS + 5 Years) in Bus Admin, A/Cing, Commerce, CIS, MIS, or related with 2 year of exp. Mail resume SDC Design, 529 Fifth Ave, 16th Fl, NY, NY 10017 or email sridhar@sdcdesigns.com.

**Position Title** Director - HR, Sales & Marketing  
**Location(s)** Somerville, New Jersey, United States  
**Director - HR, Sales & Marketing Somerville, NJ**  
 Analyze & modify comp & benefits policies to establish competitive programs & ensure compliance W/legal requirements. Advise on orgn policy matters - equal employment opportunity & sexual harassment, & recommend needed changes. Deal W/understaffing, refereeing disputes, firing employees, & administering disciplinary procedures. Plan, direct, supervise, & coordinate work activities relating to employment, compensation, labor relations, & employee relations. Direct staff training & performance evaluation to develop & control sales & service programs. Determine price schedules & discount rates. Review operational records & reports to project sales & determine profitability. Gather data on competitors & analyze their prices, sales, & method of marketing & distribution. Collect & analyze data on customer demographics, preferences, needs, & buying habits to identify factors affecting product sales. Measure the effectiveness of marketing, advertising, & communications programs & strategies. Forecast & track marketing & sales trends, analyzing collected data. Bachelors in Mgmt, Bus, Social Work, Econ, or related W/5 yrs exp. Mail resume Choice Cabinetry, 61 Fifth St, Somerville, NJ 08876 or email jobs@choicecabinetry.com

**Job Name** Engineer, Sr. Software Dvlpmnt.  
**Position Title** Engineer, Sr. Software Dvlpmnt.  
**Location(s)** California, United States  
 (four (4) positions), Employer: Exadel, Inc. Dev. web-based e-commerce apps using d/b technologies at client sites & employer's HQ in Walnut Creek, CA. Job involves travel to client sites for long-term projects, primarily in SF Bay Area, but other sites thruout the U.S. are possible. Use ETL tools to extract, transform & load data. Perform data modeling, create ER Diagrams, analyze reqs., create technical specs, test, & resolve defects. Analyze business reqs, create tech specs, & architect data flows. Perform unit & system testing of D/B Stored Procedures/Functions & Triggers. Design & mng code framework for automatic unit testing, linting, etc. of JavaScript & CSS code. Contribute to UI design & code reviews. Create proof-of-concept designs. Work w/ support teams to resolve defects. Est team coding standards. Primary technologies: MySQL, Oracle RDBMS, DB2, Java/J2EE, & Unix/ Linux. \$126,630/yr. 8am-5pm, Mon-Fri. Must have BS/BA in CS, Eng., Info. Sys., Math, or other field w/study of s/w dev. + 5 yrs. enterprise s/w dev. exp., or MSCS + 3 yrs. enterprise s/w dev. exp. Exp. must include MySQL & 1 other major d/b system (eg Oracle, DB2 or SQLServer), Java/J2EE, & Unix commands & shell scrptng. Must have legal right to work in US. Send resume to Recruitment & Employment Office, EXADEL, INC. Attn: Job Ref #: EXA41991, PO Box 56625, Atlanta, GA 30343



**Job Name** SYSTEMS ANALYST-II  
**Position Title** SYSTEMS ANALYST-II  
**Location(s)** IRVING, Texas, United States

OTHER CLIENT LOCATIONS, United States

Systems Analyst-II (Irving, Texas): Perform requirement analysis & prepare blue prints; gather business requirements and identify the gaps; perform technical design of the solution; write technical and functional specifications; develop an initial draft of the business scenarios; as well as be involved in architecting and designing business applications. Travel to various unanticipated client sites.

**Job Name** LEAD BUSINESS ANALYST, HEALTHCARE,  
AGILE - SCRUM  
**Position Title** LEAD BUSINESS ANALYST, HEALTHCARE,  
AGILE - SCRUM

**Location(s)** Raleigh, North Carolina, United States

LEAD BUSINESS ANALYST, HEALTHCARE, AGILE - SCRUM - (Raleigh, NC and various unanticipated locations throughout the US) – Analyze business requirements for Agile – Scrum environment projects for healthcare insurance domains. Travel req'd to various unanticipated client locations throughout the US. Resumes: HR Manager, DynPro, Inc., 7412 Chapel Hill Rd, Raleigh, NC – 27607 or apply online at [www.dynpro.com](http://www.dynpro.com). Reference LEAD BUSINESS ANALYST, HEALTHCARE, AGILE – SCRUM when applying.

**Job Name** Solutions Architect  
**Position Title** Solutions Architect  
**Location(s)** Durham, North Carolina, United States

Zaloni, Inc. seeks Solutions Architect in Durham, NC. Design and develop enterprise grade Data Management Solutions and platforms for Fortune 500 customers. These solutions include custom dashboards for visualization, Big Data Analytics platforms and knowledge management solutions. National travel required 5% of time. Submit application online at [www.zaloni.com](http://www.zaloni.com)

**Job Name** Bank Of America/Kaushik  
**Position Title** VP; Market Information Manager I  
**Location(s)** Charlotte, North Carolina, United States

Bank of America (BoFA) has an opportunity for the following FT position (8am-5pm, Mon-Fri, \$89,761/yr) in Charlotte, NC. VP; Market Information Manager I. Duties: Apply mathematical models & report on other optimizing methods, when applicable, to develop & interpret info that assists management with decision making. Collect data & develop decision support reports. Define data requirements, gather & validate info, applying judgment & perform extensive testing. Collaborate with senior managers & decision makers to identify & solve a variety of problems. Perform validation & testing of modeling criteria in marketing campaigns. Suggest improvements to business methods & procedures, including infrastructure systems & logistics systems. Study & analyze info about alternative courses of action to determine which plan will offer the best outcomes. Prepare management reports that define, evaluate problems & recommend solutions. Utilize knowledge of modeling & statistics only to incorporate targeting models in campaign waterfalls. Select specific & appropriate marketing campaigns to be used in development of targeting models for use in Digital Channels. Furnish datasets of impressions, clicks & booked units/sales for use in test & validation of models. Recommend exploratory variables for consideration in the final model. Review gains charts of deciles from validation sample to ensure effective predictive capabilities. Implement final models in targeted campaign populations. Perform simulation & validation of campaign requests in DEV environment, & subsequent accurate transitioning of each configured campaign from DEV into PROD. Preoptimization, quality customers for marketing campaigns to be placed on eligibility files. Deliver campaign populations for optimization with constraints. Generate & share summary reports with business partners & senior management. Analyze data related to historical campaign eligibility & offer presentations across Digital & IM channels of distribution, by accessing Epsilon through the Citrix portal. From

the Citrix portal, access the Barbuda, Tobago platforms to extract impressions, clicks & presentations data from ADM02. Use Atlas & make arrangements to transmit campaign info from Epsilon to BA Clear. Meet on a weekly basis with digital channel managers for campaign planning sessions. For the purpose of these meetings, update, maintain & review the status of campaigns on drive calendar that shows weekly planned campaign launches & refreshes. In online channels, ensure delivery of marketing campaign customer populations to TOLA, CCAD, SB CCAD, SASO, SASI, SO, SAHP, VP, HLAD & 3rd Party Sites. In offline channels, to be responsible for criteria implementation & eligibility file delivery to the optimization team for the following channels of distribution: BC, CC for IVR units, Reps, CCC & I-Originate. Configure campaigns in 335 Matrix for banking products & services, including SB & Insurance products, coupled with OLB & DFS. Apply knowledge of privacy & info sharing statutes related to marketing financial products to customers, including AFM, AFS, VT, CA SB1 & GELS. Furnish enterprise privacy workbook with all privacy & info sharing requirements implemented for campaign populations generated. Request new fields to be added to MDMParties & to be intimately familiar with input data fields from MDMPARTIES & 338 Tactics. Utilize UMO to retrieve business requirements & campaign presizings. Apply standard & campaign level suppressions for campaign configuration. Requests experience with Stats Only Sys(SAS); Base, Macros, SQL; TOLA & SASO Configuration Matrices; TouchClarity/ Omniture/Adobe Targeting; BACARDI & 'W' Teradata; Queryman; Unix; VBA 6.3; MS Excel 2003; MS PowerPoint 2003; Windows XP Professional; MS Access 2003 & SQL Server; Epsilon - Citrix Gateway; & ADM/IBM Netezza. Requests include Master's degree in Operations Research, Industrial Engineering, Electrical Engineering, Computer Engineering or related quantitative field & 1 year experience in job offered or as a Trainee, MS Access Developer, Research/Training Assistant, Analyst, Programmer, related. Any suitable combination of education, training, or experience is acceptable. Mail resume to: Recruitment & Employment Office, Bank of America, Attention: Job Ref # BAN43980, P.O. Box 56625, Atlanta, GA 30343.

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# Beating the Boomer Bust

By John F. Dini

More than 60% of US business owners are over 50 years old, and many of them are looking toward retirement and the process of attracting and vetting potential buyers to take the reins. The differences in yesterday's and today's business landscapes are stark—as Boomers were raised in a highly competitive environment, many face the problem of having built companies that won't attract a new generation of buyers. Three major trends impact the salability of a business. Understanding these trends can help owners transition successfully in a challenging market, and ultimately identify the buyer who will carry their company's torch going forward.

## Why Do Boomers Work So Hard?

Baby Boomers are 2 ½ times more likely to own a business than the generations before or following. Between 1975 (when the first Boomers turned 30), and 1986 the formation of new businesses in America jumped from 300,000 to 700,000 annually. Faced with fierce competition on the pathway to success, many Boomers chose to chase the brass ring by going into business for themselves. New business start-ups have never again reached that level. The result is that nearly two-thirds of all businesses with fewer than 500 employees are in the hands of people who are preparing to retire.

The impact of the Baby Boomers at each stage of life created a one-time surge in many statistics. They tripled the number of college graduates, and brought over 50 million women into the workforce. Between 1970 and 1980 the population of the United States increased by 11%, but the employment base grew by an astonishing 29%. Replacing such a massive portion of the population in the business sector is no easy feat.

## The Perfect Storm

There are three major trends that challenge a small business owner preparing to exit. Like the movie "The Perfect Storm," these three trends; demographic, psychographic and sociographic, are combining to create a Tsunami that will change the entire landscape of independent business ownership.

- **Demographically, the generation following the Boomers (Gen X) is much smaller.** From a supply and demand perspective, there simply aren't as many available buyers as the number of potential retirees seeking them.

- **The psychographic profile of the buyer generation is unfavorable.** What business owner hasn't complained about the work ethic of the younger generation? Raised in a forty year period of economic growth (the longest sustained period of expansion in our history) Generation X and their successors (The Millennials) are more likely to choose family first, and perceive jobs and employers as merely the means to a personal end.

They aren't wrong. The parents of the Boomers' understood the difference between work and personal life. One started when the other ended. In their drive for success, the Baby Boomers mixed the two and created the term "work/life balance". Younger generations are actually returning to an older set of values.

- **Sociographic trends favor alternative careers over business ownership.** Corporate America is well aware of the issues and attitudes of the younger generations. They have already made many adjustments. Telecommuting, sabbaticals, family leave, and flex time are benefits designed to attract younger workers who have a different set of priorities. Few small businesses have the depth or breadth to allow skilled employees to come and go according to their individual priorities.

Young entrepreneurs have little interest in the service-oriented brick-and-mortar companies that dominate small business. They seek a level of freedom that doesn't require being on call, schedules driven by customer convenience, or a 55 hour work week. Combined with the sheer lack of prospective buyers, a reduction in the number of small businesses becomes more than likely, it is inevitable.

Yet, many small business owners are depending on their company to fund a comfortable retirement. Their plan goes something like this: "I will work really hard until I am tired, and then I will find some energetic younger person *just like me* who is willing to commit everything for this great opportunity."

## Beating the Odds

Fortunately, if you are a successful business owner, you've already proven your competitive instincts and abilities.



With some planning and foresight, you can still beat the Boomer Bust and achieve your retirement objectives. There are two pathways to succeeding in a crowded sales marketplace.

#### • Build to Sell

Your first option is to build a business that is attractive to your younger buyers. It allows for personal flexibility. It can't require a huge down payment, since these generations were raised in a "buy-now-pay-later" world, where they are carrying substantial debt from the day they graduate college, and have little opportunity to amass liquidity.

Your technology doesn't have to be cutting edge, but it needs to be current. Nothing turns off the tech-savvy young buyer faster than a company that is limping along on outdated software or (heaven forbid) paper. Of course, the other attributes of an attractive acquisition; growing margins, a distributed customer base and predictable revenues, are a given.

#### • Hire Your Buyer

The second option is to hire your buyer. The stereotypes of different generations aren't universal. Certainly we all know Boomer slackers, as well as young people who are ambitious and hard-working. Lacking capital, many of those younger go-getters would like to own a business but have difficulty seeing how they can make it possible. Identifying such a buyer in your own organization, or even reaching outside and recruiting one, is a viable option if your target date for exiting is a few years away.

Creating your own successor requires a commitment to planning and development, but the financial aspects are fairly simple. A few years of selling equity in small amounts can let your successor build a minority stake. Then he or she can obtain third-party financing for the balance of the purchase so you can maintain control through the process, and take the proceeds with you when you leave.

Remember; "The more you work in your business, the less it is worth." Everything you do to reduce your business's dependence on your personal talents, to reduce the time commitment of running it, and to make it easier for any successor (whether internal or external) to take over the reins, also increases its value to any buyer.

You can't change the factors that create the most competitive selling environment in history. Understanding what the future looks like, and realizing that your buyer is unlikely to be someone "just like me" is a critical first step in the process.



#### About the Author

John F. Dini is a coach, consultant and author of the award-winning book *Hunting in a Farmer's World, Celebrating the Mind of an Entrepreneur and Beating the Boomer Bust*. Widely recognized as one of the nation's leading experts on business ownership, John has delivered over 10,000 hours of face-to-face, personal advice to entrepreneurs. For more information on John F. Dini, please visit [www.johnfdini.com](http://www.johnfdini.com).

A promotional advertisement for Cisco Press. The top half features the Cisco logo and the text "Advance Your Career Today! SAVE 30% on all Cisco Press Certification and Networking Technology learning products today." The bottom half shows a woman with long brown hair, wearing a white tank top and blue jeans, sitting on a grassy field and working on a silver laptop. The text "Shop Now At ciscopress.com" and "Use Coupon Code TECHSUPPORT" is overlaid on the right side. The Cisco Press logo is at the bottom right. A small disclaimer at the bottom left of the ad reads: "Coupon TECHSUPPORT valid for 30% off the list price of eligible products purchased on ciscopress.com. Coupon may not be combined with any other offer, and is not redeemable for cash. Coupon not valid on book + eBook bundles, Rough Cuts, Safari Books Online, or Live Online Training. Coupon expires on December 31, 2013. Offer subject to change."

The logo for CRC Press, part of the Taylor &amp; Francis Group. It features the "CRC" logo in a white circle on a black background. To the right, the text "CRC Press" is in a large, white, sans-serif font, with "Taylor &amp; Francis Group" in a smaller font below it. At the bottom, "AUERBACH PUBLICATIONS" is written in a large, white, all-caps font.

The logo for Auerbach Publications. The name "Auerbach Publications" is written in a large, bold, red font. Below it, the tagline "The Final Word in Enterprise Computing and Networking" is written in a smaller, red font.

## Pasternack Introduces New Lines of Digitally Programmable Attenuators

Brand New 5-10 Bit PIN Diode Digital Step Attenuators Up to 40 GHz Now Available from Pasternack

November 13, 2014 – Irvine, CA - Pasternack Enterprises, Inc., a leading manufacturer and supplier of RF, microwave and millimeter wave products, announces the release of their new 5 Bit, 8 Bit and 10 Bit broadband PIN diode digital step attenuators with performance up to 40 GHz depending on the configuration. These programmable, variable step attenuators are commonly used in electronic warfare, military and space communication systems, radar and test and measurement applications.

Pasternack's new digital step attenuators come in 30 dB and 60 dB values and have attenuation step resolution of 0.25 dB to 1 dB depending on the model. These programmable RF attenuators from Pasternack offer excellent attenuation accuracy and flatness over a broad frequency range of 0.3 GHz all the way up to 40 GHz. Insertion loss ranges from 4 dB to 8 dB and P1dB (power) ranges from 10 to 20 dBm depending on the chosen unit. These new variable attenuators meet MIL-STD-202F standards for shock, vibration, altitude, humidity and temperature and are constructed using a durable, but slim line housing, measuring only 0.5" thick.

The new high precision PIN diode digital attenuators from Pasternack offer fast and reliable switch speeds and high linearity. The lower frequency 0.03 to 18 GHz digital step RF attenuators are equipped with female SMA connectors, while the high frequency units reaching 40 GHz use female 2.4mm connectors. The power control connector for each unit is a 15 PIN Micro-D-Female connector.

"Our latest addition of PIN diode digital step attenuators provide our customers an off-the-shelf solution previously not available for these types of high reliability products where long lead times can exceed 8-12 weeks," explains Michael Rachlin, Director of Product Management at Pasternack. "We are continually expanding our active RF component offering to provide our customers a true one-stop-shop for all their RF requirements."

The new digitally programmable step attenuators are in-stock and available to ship from Pasternack today. For detailed specs on these products, please visit [http://www.pasternack.com/pages/Featured\\_Products/broadband-pin-diode-digital-step-attenuators.htm](http://www.pasternack.com/pages/Featured_Products/broadband-pin-diode-digital-step-attenuators.htm). Pasternack can be contacted at +1-949-261-1920.

About Pasternack

A leader in RF products since 1972, Pasternack is an ISO 9001:2008 certified manufacturer and supplier that offers the industry's largest selection of passive and active RF, microwave and millimeter wave products available for same-day shipping.

## Elitecore Service Management Platform enables a leading ISP in Africa to roll out nationwide Wi-Fi Services

(AfricaCom, Capetown, Nov 13th, 2014)

[Elitecore Technologies](#), the global provider of Wi-Fi Service Management Platform (SMP) announces its win for a leading Wireless Internet Service Provider in Libya, setting up a strong footprint in African Wireless market. The ISP chose Elitecore SMP to provide secured and cost effective Wi-Fi offerings with seamless connectivity for rapid launch of new services with faster go to market across all the ISP deployed hotspots at residences, corporate, retail hotspots like cafes, restaurants, hotels, resorts, universities, government and private sectors.

The comprehensive and robust Wi-Fi Platform with end-to-end offerings of Elite Access Controller to Billing of Wi-Fi Services enabled the ISP to effectively cater to a multi-segment subscriber's portfolio. The SMP fulfilled the ISP's requirement to seamlessly authenticate the user with their login credentials, display customized location specific captive portal web pages with branding facilities, portal for resellers to generate vouchers, customer portal for end users to manage their accounts as well as mechanism to securely and automatically connect to Wi-Fi network.

Spokesperson, ISP – Libya commented, "Elitecore Service Management Platform (SMP) integrated with Elite Access Controller enabled us to successfully roll out nationwide Wi-Fi services and launch innovative business models with customized Wi-Fi packages for individuals, businesses and government institutions leveraging our existing Wi-Fi hotspots. Elitecore's proven experience in Wi-Fi deployments with its flexible, scalable and cost efficient offerings had a distinct advantage for us over the competition. We appreciate the timely delivery and excellent support from Elitecore team."

**Says Akshat Joshi, VP, Wi-Fi Product Management, Elitecore Technologies**, "With the ISP's existing investments in deploying Wi-Fi hotspots, Elitecore SMP helped to leverage the overheads and enabled them with solution at competitive pricing to offer high speed Wi-Fi mobility services and deliver enhanced user experience with multiple business case offerings. The platform capabilities helped ISP to offer differential prepaid packages for residences and corporate with varied time & volume based plans, prepaid vouchers across varied hotspots at cafes, hotels, hospitals, universities, malls for Wi-Fi access.

Along with IP Pool management and centralized DHCP for IP allocation the platform also facilitated the ISP with real time session management with respect to quota, provided plan based bandwidth allocation and offered support for web based URL and application filtering plans. The flexibility and modular nature of the platform enabled the implementation in the minimal time frame as well as it opens the monetizing arena for ISPs to partner with Telcos and Cable MSOs through sharing the ISP laid Wi-Fi infrastructure.

For more information: [Download Case Study](#)

About Elitecore:

Elitecore Technologies, a Carlyle-investee IT product company is a leading provider of Wi-Fi Service Management Platform (SMP) with large number of Carrier Wi-Fi deployments helping the Service Providers leverage their heterogeneous networks services to improve spectral efficiency, enhance service offerings, earn profitability and deliver high quality user experience. The pre-integrated and modular platform has Enhanced Mobile App, ANDSF, Advertisement Server and Monetization Framework that enable operators to tap new revenue opportunities by Intelligent offloading, LTE – Wi-Fi interworking, location based offerings and launch innovative use cases across different business verticals viz. Public spaces, Enterprises, Residences, Hospitality, Municipalities, Stadiums, Universities, Malls etc. thus ensuring faster time-to-market and better TCO.

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# Why Most Experts Fear for the Future of Technology

By **Apek Mulay**

## Tech Expert & Macroeconomist Explains Moore's Law & What Needs to Change

Technology advances so quickly today that many of us, upon buying a brand new electronic device, may wonder how long it'll take before the product is old news.

Is it less than a year; a few months; as soon as you pull it out of its packaging?

Throughout most of human history, the same methods and tools of trades were handed down generation after generation. How is it that, these days, cutting-edge technology earns antique status in less than a decade? The shortest answer is found in Moore's Law, says tech expert and macroeconomist Apek Mulay.

"Moore's Law, named after Intel co-founder Gordon Moore in 1965, is the observation that, in computing hardware, the size of transistors on a chip shrinks, enabling the number of transistors on a chip to roughly double every two years, thereby increasing their capacity for computation and energy," says Mulay, author of "Mass Capitalism: A Blueprint for Economic Revival," ([www.ApekMulay.com](http://www.ApekMulay.com)), which presents solutions to the economic problems threatening the United States and global semiconductor industry.

"Moore's Law has profound implications both for technology and the national and global economy. As long as it can be sustained, we can continue benefitting from the technological innovations and new consumer electronic goods."

While Moore's Law is, on the one hand, a law of physics, many semiconductor industry professionals believe that the economics of manufacturing – specifically, the high costs of investment in shrinking transistor dimensions – will force its premature end. That would be disastrous for the economy: the end of growth for a huge sector, and associated sectors that depend upon it.

While industry professionals are experts in technology, they lack expertise in macroeconomics, and that has created the problem, Mulay says.

**"Moore's Law, is the observation that, in computing hardware, the size of the transistors on a chip shrinks, enabling the number of transistors on a chip to roughly double every two years, thereby increasing their capacity for computation and energy."**

On the 40th anniversary of Moore's Law, its creator said it is "really about economics." When Moore first advanced his famous observation, we were in the golden years of free market capitalism in America. He wasn't worried about the U.S. economy, Mulay notes

"While Moore's Law progressed predictably on the physical side as transistor dimensions

shrank, macroeconomics was completely ignored by American businesses," he says. "The trade deficits and budget deficits began to soar. The fabless business model, which outsources the manufacture of devices and semiconductor chips, was a win-win for the overseas manufacturers and the fabless industry." However, the fabless model resulted in twin deficits, threatening Moore's Law.

Over the past 50 years, Moore's Law has been scaling at all costs and ignoring macro-economy, Mulay says.

"No progress is sustainable without a sustainable macroeconomic progress," he says. "Hence, for Moore's Law to continue for the next 50 years and beyond requires progress on the physical side and equally good progress on the economic side. Only when physics and economics succeed can Moore's Law succeed and the semiconductor industry continue to progress.

Moore's Law can easily continue for the foreseeable future if the chip manufacturing industry becomes sustainable by having a balanced economy, Mulay says. That will require some major macro-economic reforms for eliminating the gap between supply and demand caused by the gap between wages and productivity.



### **Mulay offers three remedies:**

- **Refuse to accept monopoly capitalism in the global semiconductor industry.** In 1968, 256KB worth of memory for a mainframe computer would have cost you \$100,000. Today, eight gigabytes of memory costs just \$6. However, while the price of the basic technology has plunged steeper and faster than Moore predicted, the cost to consumers of products utilizing that technology is still high. The plunging prices from the progress of Moore's law have mainly benefitted the highest income earners, including investors, due to monopoly capitalism. Government sanctioned monopolies have succeeded in maintaining artificially high prices at the retail level in order to protect their profits and share value. Prevent formation of huge monopolies by means of decentralization of supply chains which will also improve the efficiency of supply chains.
- **Implement a system of neo-cooperative ownership of companies by their employees.** Company decisions should not be controlled by outside investors due to their ownership. Instead, employee ownership and neo-cooperative management by a company's employees not only benefits them but America's overall national interests while helping to sustain Moore's Law. Employee owned/operated companies are examples of mass capitalism as opposed to monopoly capitalism, which is driven almost entirely by profit-seeking non-employee investors. The manipulation of pricing endemic to monopoly capitalism is contributing to the early demise of Moore's Law. Another benefit: Firms that are owned and guided by employees would provide better benefits to their workers, freeing the government of this task and reducing its deficits.
- **Reform our political system in order to mitigate the power of special interests.** In order to make the necessary economic changes, we'll have to reform our political democracy. Rather than having special interests and deep pockets dictate federal policy, power must be restored to the electorate. Representatives and senators should poll their constituents on a wide range of issues, from maintaining the military industrial complex to how best to deliver equitable health care. We should also consider decentralizing the Federal Election Commission in favor of putting such power and influence on the local level, thereby focusing democracy on localized issues. A civilian democracy can work successfully on a national level only when it can work at the grassroots level. Additionally, There is no meaningful political democracy without a functioning economic democracy.

The above proposed solutions would transform crony monopoly capitalism to free market capitalism that would work for all Americans, Mulay says.

The proposed solutions would benefit not only semiconductor industry professionals but also business leaders. It would encourage small but efficient government, low unemployment, a stable economy, lower taxes, steady growth in corporate profits and the end of speculations that result in a bubble economy, Mulay says.

Restoring a free market economy in the United States will not only ensure the progress of high technology and innovation, but will also help the global semiconductor industry progress to 450 mm diameter silicon wafers in order to improve their profitability from mass production, Mulay says.

"These macroeconomic solutions will usher in an economic democracy and they will please the classical and neo-classical economists and the business community because of the smaller size of government," he says.

"The neo-Keynesians will be happy because of the smaller government and inherent stability in the U.S. economy. Because wages will align with productivity, there will be less inequality in the economy. Such an economic system will benefit the employees and the CEOs of the microelectronics industry as they would see a steady growth in their profits and a steady rise in share prices of their corporations."

In this way, Mulay says, mass capitalism-based free market reforms envision sustainability of huge capital investments in the transition to 450mm diameter silicon wafers along with continued sustainable technological progress of Moore's Law.

Looking back into the history of macroeconomics, we know that an economic depression can occur when individuals stop spending. Some major players in the global semiconductor business, such as Intel and TSMC, are concerned that their investments for transitioning to 450mm diameter wafers will not yield significant returns. This could turn out to be one of the causes for money to remain inert or unutilized in this capital intensive business, Mulay says.

As a result of those policies, money in the economy would become immobile or inert; consequently, there would be no investment, no production, no income and hence further reduction in consumer purchasing power, Mulay says. There would be very few buyers to for new electronic goods.

“This analysis explains why macroeconomic reforms have become critical for progress of Moore’s Law as well as for transition to 450mm diameter silicon wafers to ensure that money does not remain inert and keeps circulating in the economy,” Mulay says.

“This circulation of money is critical to maintaining increasing consumer demand for the latest and greatest electronic products. Without macroeconomic reforms, progress of Moore’s Law seems impossible and the chances of the U.S. economy transitioning from a great recession to an economic depression seems inevitable.”

**About the Author**

*Apek Mulay is CEO of Mulay's Consultancy Services, a senior analyst and macroeconomist in the United States semiconductor industry and author of the new book, "Mass Capitalism: A Blueprint for Economic Revival," ([www.ApekMulay.com](http://www.ApekMulay.com)). He attended the University of Mumbai in India and later completed his master's in Electrical engineering at Texas Tech University. Mulay authored the patent "Surface Imaging with Materials Identified by Colors" during his employment at Texas Instruments Inc., and has chaired technical sessions at International Symposium for Testing and Failure Analysis (ISTFA). The U.S. government approved his permanent residency under the category of foreign nationals with extraordinary abilities in science and technologies.*



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- Astronaut Jim Lovell, Apollo 13, April 13, 1970

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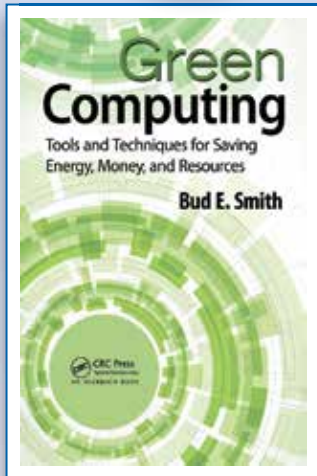
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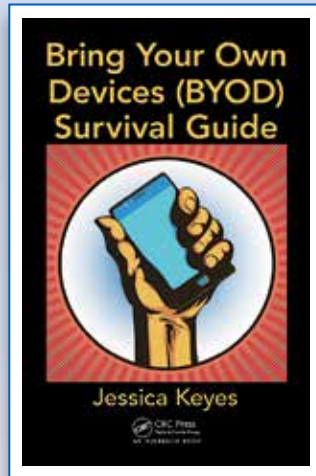
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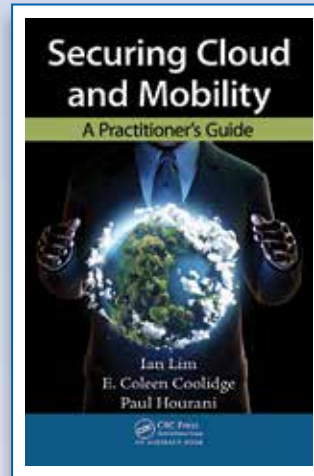
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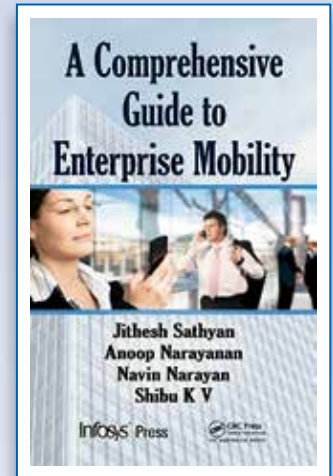
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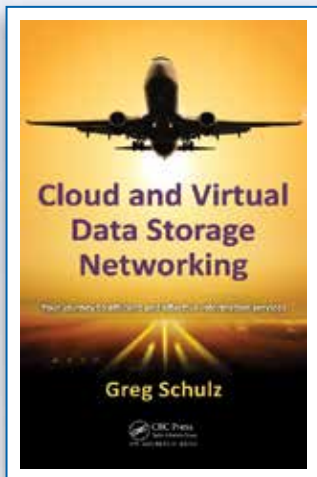
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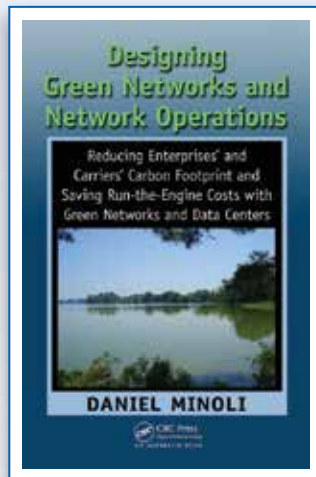
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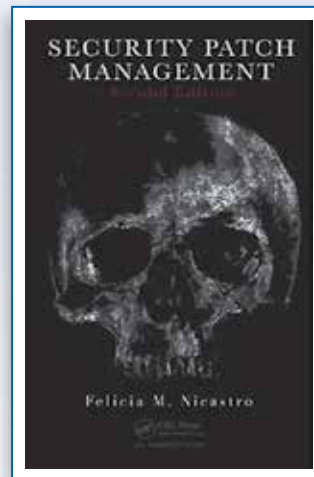
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