

LIVE AT ALTA WATTA | FALL 2017

INSIDER

EXPRESS

THE FUTURE OF PROGRAM DELIVERY?



1 Some people worry that the world might heading towards a robot intelligence: could it take over the world?

2 Old s may have to change in order to solve our infrastructure challenges

3 To survive in dystopia, is key

4 sourcing: a problem-solving strategy that might be useful in engineering... if we dare to try it

5 Many sci-fi stories fear that people are becoming more and more

Across

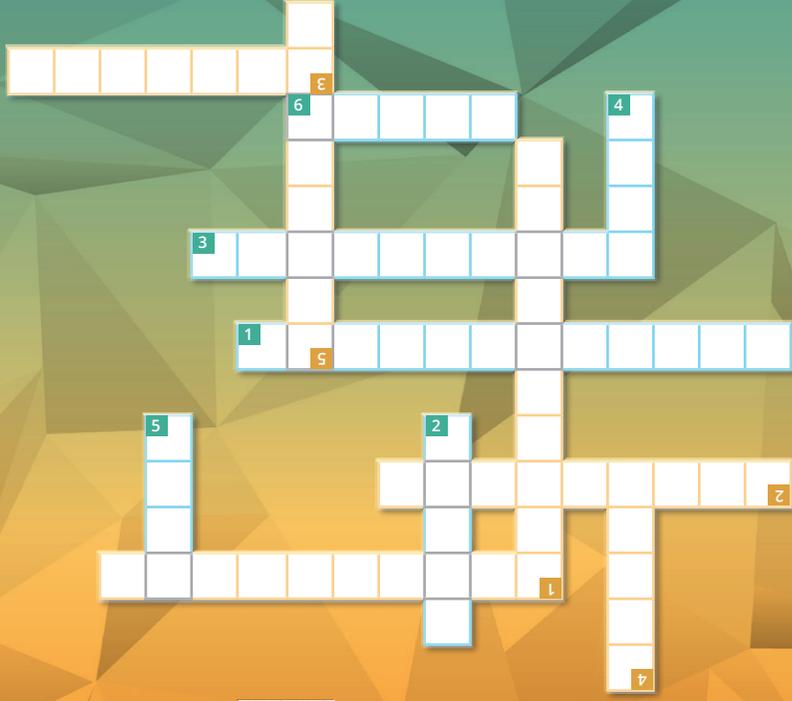
Down

Across

- 1** Artificially created could revolutionize design
- 3** The future of project delivery depends on rather than tradition
- 6** 's fair: a place where nations come together to share the best of their creations

Down

- 2** In utopia, s are machines that work in harmony with people
- 4** A good is essential to using technology successfully—and avoiding a dystopia
- 5** Remote sensing can be used to monitor health in structures such as



(Answers: 1. intelligence 2. robot 3. innovation 4. plan 5. dams 6. world)

(Answers: 1. Across: apocalypse 1. Down: artificial 2. transition 3. agility 4. crowd 5. nonhuman)

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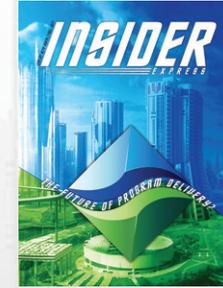
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TIP OF THE UTOPIAN SPEAR

Greetings AV-ators and all people interested in engineering, quality, communication, and how we will improve our projects both now and in the far-flung future! In this issue of the *Insider Express* we go BOLD, and for the first time our team has created a window into life at Alta Vista that is also designed to be in time with the California Self Help Counties' "Focus on the Future" event in San Francisco.

To do this, we have split our take on the future into "Utopian"—the positive, sometimes Disney-esque or Star Trekian view of how humans will work together with technology to advance our collective culture and live well. Then, if you flip this book and read it backwards, we dare you to uncover the "Dystopian" future. In Dystopia there is no ISO 9001, Six Sigma or integrated quality management systems, and there is a greater need than ever for steel and concrete inspection! If you are reading this issue of the *Insider Express* in this direction, you are blazing a path into the light of "Utopia," a place that does the partnerships needed to deliver



Always one to focus on doing new CEO Paul Bews the running technical panel he is moderating event, called "Effective Innovation: California Infrastructure." Here, changing demographics, policies infrastructure needs and how innovative technologies and business approaches will be applied to find solutions and stretch resources to deliver better projects.

not exist, but is the inspiration for optimal human environments.

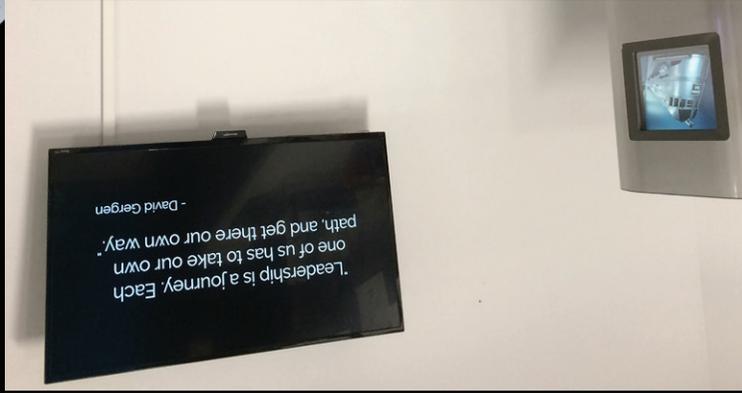
right, in this issue we give our room he needs to frame up the at the "Focus on the Future" The Future of Technology in panel members will discuss how and behaviors are affecting our

It does not matter in which direction you read this issue of the *Insider Express*; Alta Vista exists in both Utopia and Dystopia, providing solutions that improve our collective culture and built environments, while fearlessly grappling with the challenges of the future. As always, in the *Insider Express* we keep you up to speed with life as an AV-ator and bring you the big wins, anniversaries, birthdays, certifications, and latest happenings in our ongoing quest to continuously improve and, of course, do right!

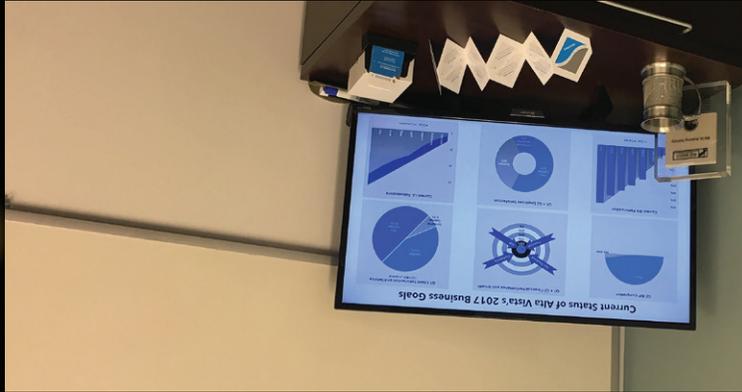
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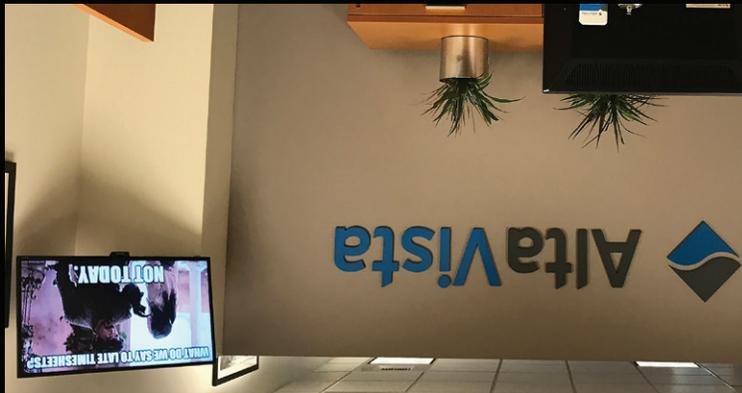
Have any videos, pictures or ideas to put on Vista Vision? Send them to csafong@altavistasolutions.com to be featured.



High-Speed Rail



New York



Sacramento

VISTA VISION

Looking for company updates? Forgot who won the Mission or Values Award? Need to know what email to send your new certification to?

GO TO VISTA VISION - CONNECTING AV-ATORS THROUGH VISUAL COMMUNICATIONS



Richmond

Los Angeles

VISTA VISION

In September, I accepted the baton pass from Mike Cook and transitioned from director of rail systems to chief executive officer of Alta Vista. As Mike continues to be a coach and advisor to Alta Vista from his beautiful retirement location in North Lake Tahoe, some of you may have some questions. What is Paul really like? What are his strategy and goals? Will things change? These are some excellent questions to be asking, and which I can't wait to answer as I get to know you all a little better in the future. As I step into this

role, I intend to pick up right where Mike left off. I will continue to focus on company growth and AV-ator development, and build on our firm's unique culture in order to deliver the best client services available. First, a little about myself: I am a mechanical and production engineer by education and training, and have a master's degree in transportation systems, strategy and policy from City University London. With more than 30 years of experience within the transportation sector and

Leadership Philosophy as Alta Vista's CEO

By: Paul Bews



Choose a particulate respirator that has "NIOSH" and either "N95" or "P100" printed on it.

Choose a size that will fit **over your nose** and **under your chin**. It should seal tightly to your face.

Choose a mask that has **two straps** that go around your head. DO NOT choose a mask with only one strap or with short straps that just loop behind the ears.

Place the mask **over your nose** and **chin**, with one strap placed below the ears and one strap above.

Pinch the metal part of the mask tightly over the top of your nose.

Throw out your mask when it gets **harder to breathe through**, or if the **inside gets dirty**.

It is harder to breathe through a mask, so **take breaks often** if you work outside.

If you feel **dizzy** or **nauseated**, go to a less smoky area, take off your mask and seek medical help.

If you have a **heart** or **lung problem**, ask your doctor before using a mask.

ALTA VISTA CAN PURCHASE PARTICULATE MASKS FOR YOU - JUST LET YOUR SUPERVISOR KNOW.

THEY ARE ALSO SOLD AT MANY HARDWARE/HOME REPAIR STORES AND ONLINE FOR YOUR PERSONAL USE.

For additional information, see the EPA website: <https://airnow.gov/>



I will continue to focus on company growth and AV-ator development, and build on our firm's unique culture to deliver the best client services available.

wider infrastructure domain, plus a combination of strategic, operational and technical expertise, I am excited to evolve the industry with Alta Vista!

While we operate in a traditional sector, Alta Vista is not a traditional company. We are unique, with a unique culture. Each and every AV-ator has contributed hugely to our success, their own success, and our client's success. We live by our values and we are dedicated to continuously improving. As CEO, I am dedicated to improving the lives of all AV-ators. I am committed to the safety and well-being of AV-ators and those around us. I am committed to creating opportunity for all AV-ators to progress and keep learning. I am committed to making Alta Vista even stronger, and making sure that everyone is proud to be an AV-ator. I will be a participative and facilitating member of the team.

Direction and leadership of a firm cannot exist without great management and execution from everyone. Therefore, I will not spearhead strategic direction or set goals for us to follow without considering how those strategies and goals are going to be achieved. As you all get to know me, you will hopefully see that I will participate with you wholeheartedly in our endeavours to accomplish and enact our vision; I get my hands dirty. Without delighted and trusting customers and highly energized, motivated and committed AV-ators, our business and any other business in our sector are unsustainable. I will orient our leadership, communication, training and recruitment toward providing great customer and team experience, fun at work, and growth.

I am very excited to take on this new role as CEO, and I look forward to meeting and working with all of you!

NEW HIRES

JULY



Andre Totari
Vallejo



Anthony Valdez
Sacramento



James Rugger
Sacramento



Justin Cocolicchio
Richmond



Kelly McCamman
Sacramento

AUGUST



Jaccob Cruz
Richmond



Robert Ferris
Sacramento

SEPTEMBER



Alexandra Nicolopoulos
Sacramento



Brian Yorton
Sacramento



Chris Katrak
Richmond



Joe Lanz
Richmond



Sonya Thomas
HSR



Walter Saunders
HSR

Fire season is upon us and there are wildfires cropping up all over the country. Wildfire smoke can irritate your eyes, nose, throat, and lungs. It can make you cough and wheeze, and can make it hard to breathe. If you have asthma or any lung disease, or heart disease, inhaling wildfire smoke can be especially harmful.

Smoke is made up of a complex mixture of gases and fine particles that are produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into your lungs. If you cannot leave a smoky area, try to stay indoors and reduce physical activity when possible.

SAFETY

BY: JANNER TESHERA

N95
TC-84A-4503
Chang-hung
NOSH
NO CDN35

Wearing a particulate respirator can also help protect your lungs from wildfire smoke. These are not the same as plain dust masks. Paper dust or surgical masks will not protect your lungs from fine particles. Scarves, towels or bandanas (wet or dry) won't help, either. Particulate masks will help, but they must fit well and be used correctly:

WELFARE OF 40 PEOPLE HOUSED IN A SINGLE BUILDING?

I live in a house with 40 guys, all church members. It is one building with nearly 20 bedrooms. I have managed the house for three years now and my duties consist of rent control, conflict management, room assignment, meal coordination, and bills.

DO YOU HAVE ANY INTERESTING STORIES FROM MANAGING THE COMPLEX?

One time, during winter or spring break, there were only two or three guys left in the house. We were getting our carpets cleaned, so we had to move all the furniture. Because the cleaning was split between two days, we had to move all the furniture from five living rooms and 17 bedrooms to one half of the house, and the second day move it all to the other half. We moved all that furniture for well over 20 rooms, all with three guys. It was the perfect storm because no one was in town.



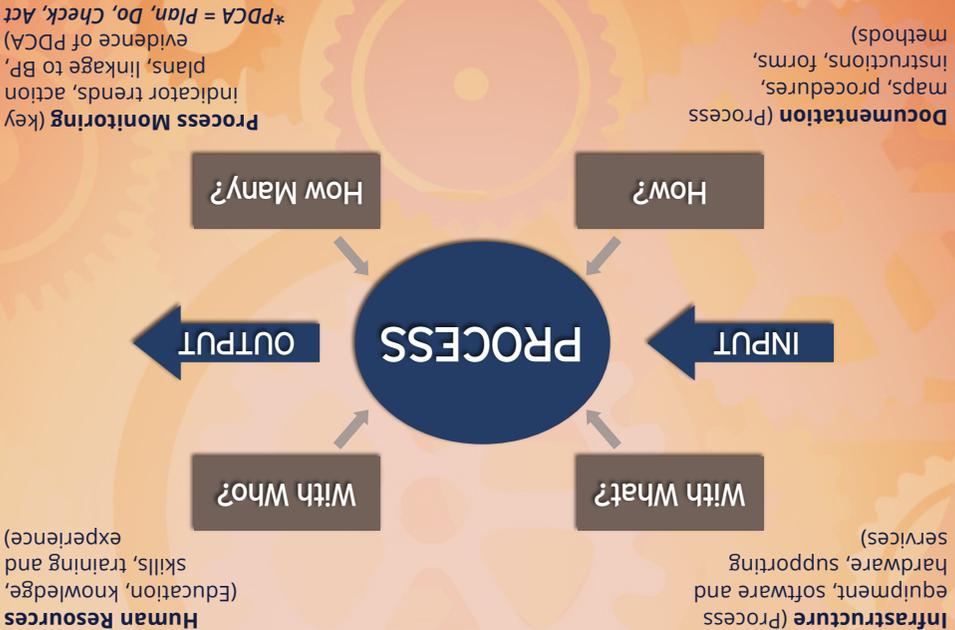
HOW DO YOU SUPPORT YOUR CHURCH FULL TIME?

I have been with my church since college. I am a volunteer-staff member and we minister to students at Sacramento State and UC Davis. Serving can mean anything from hosting bible study to hauling a trailer full of supplies to organizing a Sunday service. Along with event planning and coordination, I do video editing from time to time and photography on a weekly basis. I am actually currently teaching a five-week photography class at church.

Being a volunteer-staff member, you can A put in 40 hours a week, but it doesn't feel like that much work because I like interacting with others. I have done everything from writing procedures, creating organization charts, doing lessons learned - I basically apply my quality background to make sure everything runs smoothly.

HOW DO YOU MANAGE THE GENERAL

**EMPLOYEE SPOTLIGHT
GREG WING**



functional/departmental silos (see below):

as a process from beginning to end, rather than from top to bottom as create more value and increased efficiency. It involves looking at activities strategy that allows us to organize and manage how we do our work to

process approach? It is a management focusing on processes and continuous improvement. What exactly is the new version of the standard, we are works toward conformance to this "process approach." As Alta Vista ISO 9001:2015 emphasizes the

QUALITY
By: Jannel Teshera

By concentrating on improvement rather than just compliance, Alta Vista will remain poised to embrace the future.

CERTIFICATION ANNOUNCEMENTS



Tonya Arian
Professional of Human Resources



Ian Broddrick
CalAPA Caltrans HMA Specifications Certificate



Carolina Burgan
CalAPA Caltrans HMA Specifications Certificate



Jacob Cruz
Nuclear Gauge Safety and Hazmat



Emily Chou
CalAPA Caltrans HMA Specifications Certificate



Robert Carter
CalAPA Caltrans HMA Specifications Certificate



Patrick Young
CalAPA Caltrans HMA Specifications Certificate



Jeff Sulka
CalAPA Caltrans HMA Specifications Certificate



Nestor Cuellar
CalAPA Caltrans HMA Specifications Certificate



Brian Yorton
Cal Fall Protection



Jessica Wilbanks
CalAPA Caltrans HMA Specifications Certificate



William Sommer
CalAPA Caltrans HMA Specifications Certificate



Justin Palmaymesa
CalAPA Caltrans HMA Specifications Certificate



Guillermo Puerta-Falla
CalAPA Caltrans HMA Specifications Certificate



Cortney Vanhook
CalAPA Caltrans HMA Specifications Certificate

Alta Vista would like to congratulate the following individuals

for recently attaining one or more professional certifications.

Got a new certification?
Please send your new or
renewed certifications to
certifications@altavistasolutions.com



James Doe
CalAPA Caltrans HMA
Specifications Certificate



Ramsey Doumani
CalAPA Caltrans HMA
Specifications Certificate



Clinton Edmiston
CalAPA Caltrans HMA
Specifications Certificate



Emran Haque
CalAPA Caltrans HMA
Specifications Certificate



Mihai Hantelmann
CalAPA Caltrans HMA
Specifications Certificate



Corey Gardner
CalAPA Caltrans HMA
Specifications Certificate

Associate - Quality Improvement
Certified Quality Improvement



Rahan Naqem

Alta Vista would like to congratulate the following individuals
for recently attaining one or more professional certifications.



Keivan Hassan
CalAPA Caltrans HMA
Specifications Certificate



Jinesh Menta
CalAPA Caltrans HMA
Specifications Certificate



Winnie Lee
CalAPA Caltrans HMA
Specifications Certificate



Noah Hunt
GTM 105



Bart Krol
CalAPA Caltrans HMA
Specifications Certificate



Irene Kwan
CalAPA Caltrans HMA
Specifications Certificate



Dalton Laboskey
CalAPA Caltrans HMA
Specifications Certificate

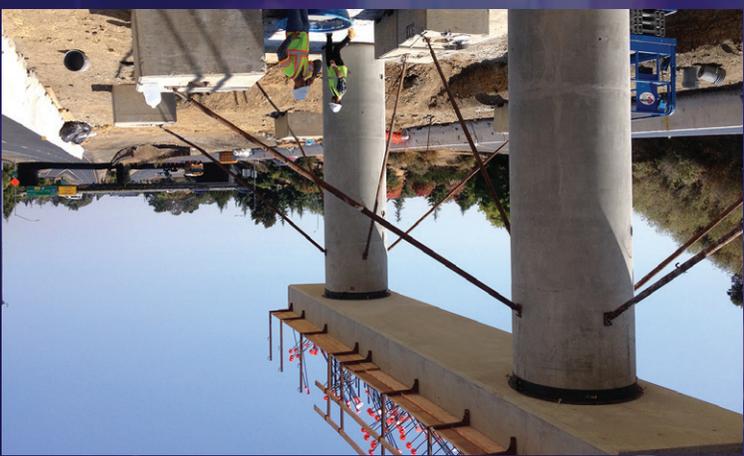
**CERTIFICATION
ANNOUNCEMENTS**

PARTICIPATE IN THE ALTA VISTA PHOTO OF THE MONTH CONTEST!

Each month, Corporate Communications selects a different photo subject for you to take pictures of and at the end of each month, we choose the best photo of that month's subject. The photos will be saved in our Alta Vista library to be used for the company magazine and other company material. The winner will receive a \$50 VISA gift card. Look out for our next Photo of the Month email!

PHOTO OF THE MONTH

PHOTO OF THE MONTH



Here is a photo of engineers William Sommer and Andre Totari at the Laurel Street O/C using PPE on the jobsite even when construction was not occurring. Doing right even when no one is looking.

September, Safety: Robert Mertz

July, Company Picnic: Adahlia Lindayen

AV-getters



August, Teamwork: Carolina Burgan

METS teams up with the Sacramento Diving Team to perform a field investigation on the Coronado Bay Bridge



Have a topic you want to write about? Send it to altavista@altavistasolutions.com to be featured

Dick and Scott focused on existential questions relating to humanity in the face of rapidly-advancing technology. In California, as we start to use this technology to improve our future, we are now looking at *Blade Runner* as a case study—and realizing that science fiction has a funny way of becoming fact.

This story is set just two years from now, and strangely, it appears to have predicted the very challenges that engineers, architects, government officials and technologists now face in real life. In California, groups like the self-help counties who create ballot measures to improve transportation and infrastructure are taking on these challenges in conferences such as “Focus on the Future,” which will be held in San Francisco just 24 days after *Blade Runner 2049* premieres. In these venues, our best thinkers are working with statewide and local leaders to imagine how technology will support, rather than destroy, our culture.

in a few years. In the world Dick creates, humans use a virtual reality experience called “mercerism” to connect with feelings of compassion and empathy. People also use a device called a “mood organ” that allows people to set their feelings to deal with the morbid environment they inhabit, which has been contaminated by radiation and overrun with unplanned urban development. Deckard uses a machine to conduct what is called a “Voight-Kampff empathy test” to determine whether subjects are human or machine, so he can retire or kill them. The Voight-Kampff has a real-world counterpart, the Turing Test, which is used to determine if a subject is human or an artificial intelligence. The Turing Test was passed (in reality) by a computer that mimicked a 13-year-old Ukrainian boy back in 2014. Dick’s story, in which people use machines to artificially connect with their humanity and machines show signs of empathy, challenges us to consider “what is human?” As technology advances, this story and our modern reality intertwine in fascinating ways.

Ridley Scott’s 1982 film is heavily based on Dick’s novel, but changes the setting to Los Angeles and gives Deckard the cool title of “blade runner” instead of bounty hunter. The film also refers to its antagonists as replicants rather than androids to better connect the artificial people with their human creators.

Scott and screenplay writer Hampton Fancher also went a step further with the story by introducing the possibility that Deckard himself might be a replicant. The movie *Blade Runner* is uncommon in the way in which it visually outpaces its literary inspiration. Scott employed futurist artists Syd Mead and Moebius, both famous for their creativity in cinema, graphic novels and industrial design to create a dark future that audiences were not ready for in 1982, but have since come to be fascinated by. *Blade Runner* has spawned novels, comic books, PhD dissertations, and numerous examinations and interpretations of its retrofitted future visuals.



IPA Awards

Congratulations to the following AV-ators for submitting winning IPAs!
We appreciate your drive to improve our processes.



Pat Judt
July



Emran Haque
August



Ben Szeto
September

Lessons Learned Awards

Congratulations to the following AV-ators for submitting winning lessons learned! We appreciate your drive to improve our processes.

July

2017 New York Celebratory Review

- Mahek Iqbal
- Ken Riley
- Rami Boundouki

August

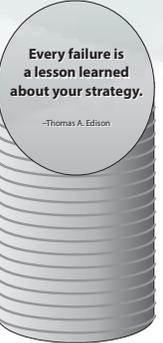
Jake Kobliska - Onboarding

- Jake Kobliska
- Karen Maghamil
- Dave Eisenberg
- Dalton LaBoskey

September

SMR Monthly Teleconferences

- Elaine Yip
- William Sommer
- Emily Chou
- Andre Totari
- Winnie Lee
- Mohammad Fatemi
- Stacey Davis
- Bart Krol



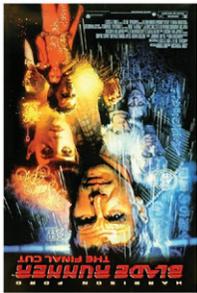
In Phillip K. Dick's 1968 novel, we follow San Francisco Police Department "Bounty Hunter" Rick Deckard as he hunts down androids that have illegally returned to Earth from off-world colonies to find a way to extend their lives, which have been designed to terminate

As transportation measures start to pass and the public becomes anxious to invest in infrastructure, our engineers and public leaders are being challenged to use these technologies in innovative ways that will improve our culture and built environments. By committing this technology to fiction, Dick's landmark story and Scott's legendary cinematic visuals beg the question: are we now at the beginning of a Public Works Renaissance or a Program Delivery Disaster? Our state and local government and agency leaders face huge challenges and fantastic opportunities that will allow them, for the first time, to bring tools like artificial intelligence, unmanned aerial vehicles, crowdsourcing, and advanced visual simulations to bear on projects designed to meet our ever-changing infrastructure needs.

n 1982, director Ridley Scott's film *Blade Runner*, a visual interpretation of author Phillip K. Dick's book *Do Androids Dream of Electric Sheep*, stunned engineers, architects, and planners—and tanked at the box office. The commercial failure was most likely because audiences did not want to see the dark future that the film portrayed, or see its star Harrison Ford, coming hot off the Star Wars franchise movie *The Empire Strikes Back*, play a hard-nosed and no-nonsense detective killing androids that looked like people. That was not the beginning nor the end of the story for this interesting tale, which its original author penned as an examination of what it is to be human. It was also a wakeup call to builders and technologists that the future may not be as bright as we have tended to see it.

This month, 35 years after *Blade Runner* commercially failed but built an impressive cult following and reintroduced Dick's work to audiences, the sequel, *Blade Runner 2049*, is being widely released in theaters around the globe. We have always thought of the technologies showcased in this film as science

fiction—but in today's California, they are now becoming real. The technology industry is delivering the innovations that frame this interpretation of author Phillip K. Dick's book *Do Androids Dream of Electric Sheep*, stunned engineers, architects, and planners—and tanked at the box office. The commercial failure was most likely because audiences did not want to see the dark future that the film portrayed, or see its star Harrison Ford, coming hot off the Star Wars franchise movie *The Empire Strikes Back*, play a hard-nosed and no-nonsense detective killing androids that looked like people. That was not the beginning nor the end of the story for this interesting tale, which its original author penned as an examination of what it is to be human. It was also a wakeup call to builders and technologists that the future may not be as bright as we have tended to see it.



Do Androids Dream of Electric Sheep and Blade Runner Review
Reviewed By: Bart Ney



MISSION & VALUES AWARDS

July

Mihai Hantelmann



Mihai Hantelmann for *Embracing our Client's Challenges as our Own* for his flexibility and agility to help the Bay Bridge close-out and LA office when needed

James Shelton



James Shelton for *Teamwork* for his willingness to take an assignment no matter the location and leaving a positive impression to the client

August

Clinton Edmiston



Clinton Edmiston for *Offering Solutions that Move Projects Forward* for his work on the IA Database, DIME JMF verification tool, and IA/RSP recomplete

Irene Kwan



Irene Kwan for *Leadership* for her eagerness to take on bigger tasks and going above and beyond to train and mentor new team members

September

Elaine Yip



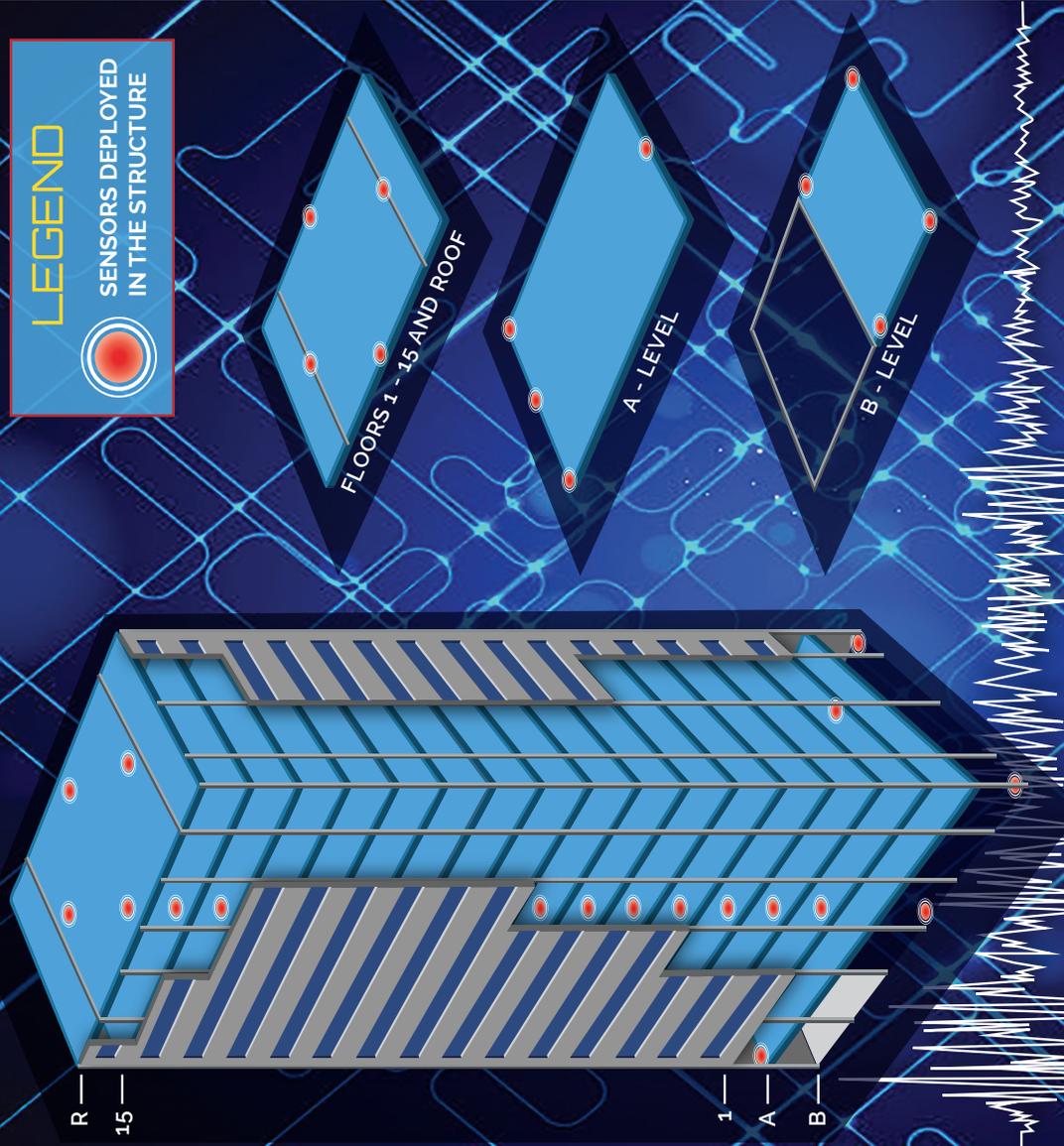
Elaine Yip for *Embracing our Client's Challenges as our Own* for independently solving our EA validation problem by thinking outside of the box

Greg Wing



Greg Wing for *Teamwork* for taking on new roles and supporting the program integration team at HSR

VISTA VISION | Structural Health Monitoring in Buildings



Structural Health Monitoring Process



HDR AVS Group

BIG WINS

IA/RSP and Corporate Roadway Materials Engineering Support Services

By: Ian Broddrick

As a joint venture, the HDR/AVS Group just won the Long Term Bridge Performance Program for the Federal Highway Administration. More on this in the next issue of the Insider!

NEWS FLASH

BIG WINS

Alta Vista recently won the Caltrans Independent Assurance/Reference Sample Program (IA/RSP) and Corporate Roadway Materials Engineering contract with the Office of Roadway Materials Testing (ORMT). Alta Vista has spent the past five years providing significantly enhanced capabilities to ORMT including laboratory technicians, materials engineers and quality experts. ORMT's role is wide-ranging, from asphalt material to electrical and chemical testing to providing IA and roadway materials engineering services, in addition to providing support for RSP to evaluate the proficiency of over 500 state, local and private laboratories.

including database development, specification evaluation, test method modification and quality management system implementation, to name a few. This new contract brings with it a significantly expanded scope of work including:

- RSP sample and engineering report preparation
- Process/peer reviews of IA staff (NEW)
- Roadway materials evaluation (field and office) (NEW)
- Job mix formula review, roadway material consultation, and test method evaluation/modification (NEW)
- Specialty testing for new product evaluations (NEW)

This win was a true team effort that embodied Alta Vista's agility in adjusting to tight deadlines and substantial last minute changes to the interview process. The team came together and delivered an excellent presentation and Q & A after receiving notification on Friday that the interview would take place the following Monday.

Alta Vista has brought together a diverse group of experts and specialty laboratories to expand our team's expertise, and ensure that Alta Vista will continue to provide an outstanding level of quality and excellence to ORMT.

Alta Vista has worked to enhance roadway materials engineering expertise in ORMT by expanding our role to include professional materials engineering services in support of a variety of activities,



Albert Einstein was once quoted as saying "We cannot solve problems with the same thinking used to create them." In 2017, it has become clear that we must address the challenges we see in transportation and infrastructure by thinking differently. When we are able to adapt and apply possibly risky, but innovative ideas and new technologies to our work, a potential exists for huge transformation. By capitalizing on these opportunities while mitigating their risk, we give ourselves an opportunity to turn what has been perceived as a domestic debacle into an infrastructure renaissance.

One potential example of an exponential innovation is crowdsourcing. Crowdsourcing is a strategy that takes advantage of larger groups of people to solve problems. While almost unheard of in engineering, it could be an incredibly useful tool in the future of transportation. Especially as visualization technology develops, infrastructure and design will become more accessible to more people, and that means more possibilities for solutions. Crowdsourcing can take a number of forms, but generally involves giving problems and challenges to outside "crowds" to solve. This approach can produce a lot of potential solutions, some of which may fail, but a few of which could be revolutionary. In the tech industry, this has been hugely successful. As infrastructure faces more, bigger, and more complex projects, crowdsourcing might give us a better chance to find creative answers.

new opportunities and help us build more innovative solutions.



EXPONENTIAL THINKING: ENGINEERING'S FUTURE FRONTIER CONT.

BIRTHDAYS



July

- 4th - Stuart Ross
- 5th - Zolo Ganbaatar
- 6th - Angel Marquez
- 6th - Fabiola Vazquez
- 7th - Dan Alsup
- 8th - Stephen Ramos
- 10th - Sopheak Chong
- 10th - Rami Boundouki
- 20th - Lucy Sims
- 21st - Vikram Singh
- 21st - Mike Hobbs
- 27th - Erik Wong
- 29th - Kevin Muser
- 31st - Michael Arce

August

- 3rd - Patrick Young
- 5th - Yang Zhu
- 6th - Melissa Pedersen
- 9th - Ed Greutert
- 12th - Carolina Burgan

- 14th - Adahlia Lindayen
- 14th - Corey Gardner
- 22nd - Alex Bowman
- 24th - Bart Krol
- 24th - Greg Wing
- 26th - William Sommer
- 28th - Jeff Sulka
- 30th - Jeremy Laniksmith

September

- 5th - Robert Best
- 8th - Pete Siegenthaler
- 8th - Robert Mertz
- 11th - Kevin Churchill
- 16th - Mihai Hantelmann
- 18th - Kelly McCamman
- 19th - Massoud Choobdar
- 24th - Christopher Glasscock
- 27th - James Shelton
- 28th - Nestor Cuellar
- 28th - Osbaldo Mejia



These innovative solutions come with a lot more questions—how will all of this be implemented? What's the best way to manage funding? How do we stop artificial intelligence from taking over the planet? These problems need creative solutions, and to make things tricky, there isn't one right or intuitive answer to a creative problem. Because of this, creativity often thrives on different and unconventional ideas from different minds and perspectives. When all those ideas come together, magic can happen.

For us, the brave pioneers taking the path of innovation and futuristic thinking, this means that we need a new way of thinking. When we look at other industries, we see that old processes are being disrupted by rapidly-emerging possibilities in technology that are moving at exponential rates. For a technology to be "exponential," the power and/or speed of the technology doubles each year, and/or the cost drops by half. Exponential growth can be difficult to grasp at first. A simple story that helps to explain it is the old story of the girl who chooses to take a job with a starting pay of one penny—but that pay doubles every day. In a month, she becomes a millionaire.

Exponential growth is counterintuitive in this way, because as humans, we are not equipped to process exponential growth. Our intuition is to use our assessment of how much change we have seen in the past to predict how much change we will see moving forward, assuming a constant rate of change (thinking linearly rather than exponentially). But exponential thinking can open up many more



EXPONENTIAL THINKING: ENGINEERING'S FUTURE FRONTIER



PROMOTIONS



Chris Gould
Quality Engineer II

ANNIVERSARIES

July

6 Years

Keivan Hassan

4 Years

Kevin Churchill

Stacey Davis

Ed Leach

Sam Fitzer

3 Years

James Shelton

Chuck Littlejohn

1 Year

Jeremy Laniksmith

Brian Li

Irene Kwan

August

4 Years

Angel Marquez

1 Year

Dominika Pekala

Michael Arce

Jessica Wilbanks

Jody Steele

Chris Gould

Greg Wing

September

8 Years

Jinesh Mehta

7 Years

Rita Leahy

5 Years

Rami Boundouki

4 Years

Chris McDermott

Danny Reyes

Robert Mertz

Bahjat Dagher

2 Years

Alex Bowman

Dan Alsup

1 Year

Lucy Sims

Massoud Choobdar

VISUALIZING THE FUTURE

Got data? As we saw on page 6, we certainly do, now that remote sensing is at work on construction projects. With technology now able to gather larger and more complex data sets, the question becomes: what do we do with all this information? Enter building information modeling, visualization, and even artificial intelligence. These tools are able to give meaning to large and complicated amounts of information, offering a lot of potential to design, planning, and execution in engineering and construction.

Building information modeling (BIM) is an intelligent 3D model-based process that can take large amounts of complex information and analyze it to optimize design and construction. It has already been used on projects to create precise models of each stage of construction, quickly giving planners and builders visibility that 2D plans struggle to provide. Going a step further, immersive visualization is starting to allow people to explore these plans in virtual reality and understand designs as they will appear when built.

Using BIM and visualization, artificial intelligence (AI) can start to play a role in design by taking large amounts of data and analyzing it to produce the best possible results. This "generative design" process mimics nature's evolutionary approach to design by exploring vast permutations of potential solutions optimized by a designer's needs. Outside of design, AI is already starting to be put to use in transportation through self-driving cars, connected vehicles, and apps such as Uber and Lyft.

Artificial intelligence and visualization can make design and planning faster and more accessible, ultimately allowing our program teams to deliver projects more quickly and accurately.



Baby AV-ators

Alta Vista would like to congratulate the Glasscock, Kobliska, and Souglobov families on the newest additions to their families!

Christopher Glasscock

Cullen Roy Glasscock was born on Tuesday, July 11, weighing in at 8 lbs, 2.2 oz and 19.5 inches long.



Jake Kobliska

Grainger Kobliska was born on Sunday, July 23, weighing in at 9 lbs, 7 oz and 21 inches long.



Aleksey Souglobov

London Souglobov was born on Saturday, September 2, weighing in at 7 lbs, 1 oz and 23 inches long.

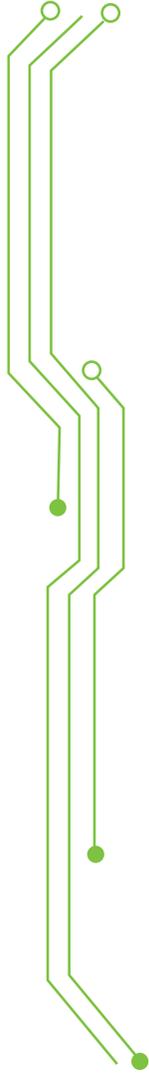


PROJECTS: NOW DELIVERED BY DRONE!

On the Balfour Road interchange project in Brentwood, CA, LIDAR and drones are pairing up to reveal how remote sensing and unmanned aerial vehicle (UAV) technology could benefit data collection and structural health monitoring in the engineering industry. The drone, equipped with a LIDAR scanner, is measuring fill volumes for cut-and-fill work during a construction project that will improve congestion on Highway 4. Using remote sensing instead of manual surveying means that workers are taken out of live traffic, the amounts of fill can be more precisely tracked and priced, and data can be collected much more quickly.

At Balfour Road, LIDAR has demonstrated how powerful the data collection abilities of remote sensing can be; rather than struggling to generate enough data, the challenge has instead been processing the huge amount of data collected. UAVs and remote sensing could offer similar benefits to much of our critical infrastructure through structural health monitoring. If flown via UAV or placed within a structure, remote sensors could potentially detect flaws present in dams, buildings, or roads much more quickly than traditional methods.

As our UAV guru Ed Greuter has pointed out, every disruptive manned (or unmanned) aerial vehicle technology to date has changed the world. At Balfour Road, drones and LIDAR show hopeful signs that UAVs and remote sensing can continue the trend and change project delivery and infrastructure for the better.



COMPANY PICNIC 2017



With big infrastructure challenges on the horizon, California agencies are already starting to think differently to solve them in new, more effective ways. The Contra Costa Transportation Authority (CCTA) is one agency who is going for the gold on futuristic innovation. Working with GoMentum in Concord, CA, they are currently testing self-driving and "smart" vehicles—cars that can operate without a driver or connect with other vehicles to sense and exchange information about their surroundings. This could reduce congestion, collisions, and cost if implemented well. With help from Alta Vista, CCTA has also been one of the first groups to successfully use light detection and ranging (LiDAR) paired with drones to improve construction and commutes, making surveying more precise, effective, and safe.

For CCTA and other California agencies, embracing futuristic solutions is not the easy road. To benefit from developing technology like smart and self-driving cars, government agencies and their partners will need to test out not only the technology itself, but the business models, data systems, and communication plans that will make implementation successful, along with getting voters on board with the changes. But it's worth the work—as more and more agencies are realizing, the future advantages of emerging technology outweigh the road bumps that come with it. While more exploration is needed before we can put self-driving cars to work, CCTA has taken a forward-thinking step towards the shifting future of roads and cars.

HOW CONTRA COSTA IS TEST-DRIVING TECHNOLOGY



COMPANY PICNIC 2017

Vista; alternative delivery methods that can build better, faster, cheaper, and more predictably; and innovative use of new technology to make project delivery more effective.

Be warned that new technologies always come with big challenges of their own. While the future lies in a project delivery revolution, many of these tools are still new, and every great technological innovation first has to be painstakingly tested by a few brave and agile individuals before it reaches its full potential. Alta Vista and California's agencies are ready to be those trailblazers. While we operate within a traditional sector, Alta Vista is a unique firm. As we push forward into the future, we are well-positioned to start bringing new strategies, new ways of thinking, and new technologies to the table that will make our infrastructure better.

The California Self Help Counties' "Focus on the Future" event explores these possibilities for

innovation, and the ways in which we can employ them to revolutionize infrastructure programs. With a long-absent influx of funding and growing public support for infrastructure improvement, large and complex programs are heading our way that need more forward-thinking delivery. Focus on the Future—and this edition of the *Alta Vista Insider Express*—will start to consider how technologies such as remote sensing, unmanned aerial vehicles (UAVs), visualization, artificial intelligence, and even crowdsourcing can make the future of infrastructure a great one, and steer us away from dystopia. With these innovations and a lot of good planning, California is prepared to create a bright future for infrastructure. Keep reading for a look at how these technologies can be used to improve construction, quality, and delivery!

BIG THINKING IN THE FUTURE OF INFRASTRUCTURE

BOLD

business models for

like Alta

All this means a lot of things, but above all, it means that we need to change the way in which we think about project delivery. We need different contracting strategies that allow owners to deliver sooner; different

exciting projects that will improve our infrastructure, which are appealing more and more to voters.

two of the top five most congested cities in the world, it's clear

This is a truly exciting time for the infrastructure sector in the USA. Particularly in California, the future for transport-related infrastructure is huge, with population in the state set to grow from 39 million today to 50 million by 2025. If we set that against the fact that Los Angeles and San Francisco are

infrastructure needs.

Teleportation may be just a bit out of reach for now, but as commute times slowly creep upwards, people are becoming more anxious for better ways to get around. After all, ease of mobility is a huge factor in where people decide to live, where to go, and how to get there. With public support rising, the need for more infrastructure solutions and funding is being recognized. The passage of senate bill 1 earlier this year will provide \$5.2 billion per year on transportation infrastructure, and in Los Angeles, the recently-passed Measure M has increased the sales tax to support spending on public transportation, some of which we are already working on. Self-help counties in California are continuing to write propositions for new and

that we need mobility solutions 10 minutes ago—whether that means roads, high-speed rail, metro, Hyperloop, more efficient airports, travel by drone, or teleporting!

Voters, the future is rushing straight at us. As we enter a new era in infrastructure, a flood of challenges and opportunities are presenting themselves to our engineers, our government, and to us here at Alta Vista. As we determine how to best

tackle these challenges, it has become clear that we need to be thinking big. Never fear—at this month's "Focus on the Future" conference, infrastructure and technology experts will come together to imagine how we can use emerging technologies and new ways of thinking to create more effective solutions for our changing infrastructure needs.

TIP OF THE DYSTOPIAN SPEAR

Warning! Av-tors and all people interested in engineering, quality, communication, and how we will use innovation and agility to deal with some of the extreme challenges heading our way now and in the far-flung future—you have just entered “Dystopia”! In this issue of the *Insider Express* we go BOLD, and for the first time our team has created a window into life at Alta Vista that is also designed to be in time with the California Self Help Counties’ “Focus on the Future” event in San Francisco.

To do this, we have split our take on the future into the “Dystopian”—a future often thought of as negative or dark as represented in films like director Ridley Scott’s *Blade Runner* or author Philip K. Dick’s book *Do Androids Dream of Electric Sheep*. In *Dystopia*, the future has been retrofitted and and grit to survive. Then, if you flip we blaze a path into the light of with technology and best practices

to survive. In this issue, our CCO and novel mentioned above in feature! As transportation are faced with the chance to create better infrastructure, legendary cinematic visuals lead us to ask: “are we at the beginning of a Public Works Renaissance or a Program Delivery Disaster?”

In California, where this story is set, our technology industry is now delivering the tools that we used to think of as mere science fiction. Our statewide and local government and agency leaders face huge challenges and opportunities that will allow them for the first time to bring technologies like artificial intelligence, unmanned aerial vehicles, crowdsourcing and advanced visual simulations to bear on projects that will meet our ever-changing infrastructure needs.

It does not matter in which direction you read this issue of the *Insider Express*—Alta Vista exists in both *Dystopia* and *Utopia*, providing solutions that improve our collective culture and build environments, while fearlessly grappling with the challenges of the future. As always, in the *Insider Express* we keep you up to speed with life as an Av-tor and bring you the big wins, certifications, and latest happenings in our ongoing quest to continuously improve and, of course, do right!

Corporate Communications Team
Bart, Jordana, Courtney, Dean, Lindsay, Lucy, Justin



Mike and Irina's Going Away Party



Strut Your Mutt

San Francisco - September 30, 2017



Congratulations to Alta Vista for winning the "Top Company Team" award!

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Alta Vista Holiday Party
Saturday, December 2

the

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of Electric Sheep and
Blade Runner: Review

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THE FUTURE OF PROGRAM DELIVERY?

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