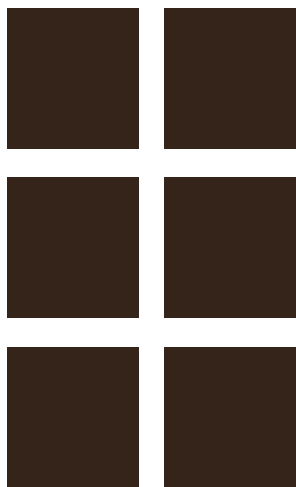


BLUNT BELL BULLETIN



Keeping Up With the
BELLS.

By
Pearl-Grace Pantaleone
Marketing Coordinator

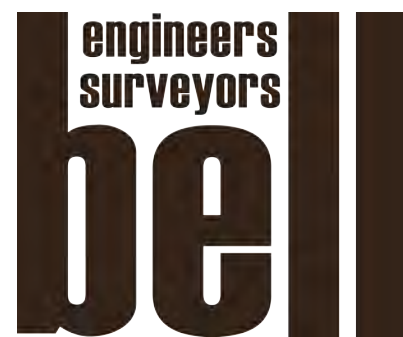


For the past year, the Blunt BELL Bulletin has highlighted the changes to the company. The good, bad, and not so bad or good. It's a little hard to keep your head up—let's face it Alaska's economy is not looking so hot right now. Oil prices reached their lowest in the past 20 years, but it has slowly recovered back up to a hovering \$40 per barrel. Still not where it was at over \$100; it will be a long time before oil get back into that range of value.

This has highly impacted design and construction of all major projects throughout the State of Alaska, and has caused the loss of thousands of government and O&G jobs. Projects are getting more and more competitive. What used to be only four proposers on a bid has now turned into over 10 or even 15. Some of which include proposers like big companies such as CH2M, Michael Baker, and Stantec for the tiny jobs out in villages.

Some firms are hurting bad for work. Some have trimmed some of their fat, and others have given up on the Alaska market entirely. We've had to make some big changes to adjust to this type of environment, but we've also made some fantastic investments to ensure our continued success here in this great state as well as branching off into the profitable Lower 48.

In Bob's State of the Company Address he shared that 2015 was the best year the company ever had. This is



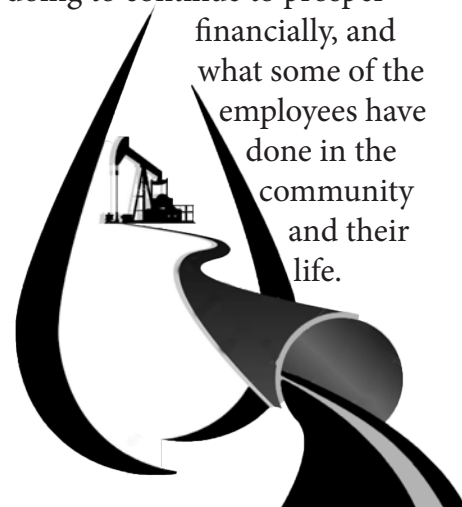
because the AKLNG and Point Thompson Project both had very high profit margins. Now, in 2016, profit is predicted to be significantly lower than the last.

Don't panic. Just because 2016 and the years to come are looking skinny, doesn't mean we won't continue to be successful. As a team, we need to work together and with twice the effort to get some more work in this type of economy. "We need a bigger piece of a smaller pie," added Bob. "We also need to go after some new pies now."

Bob said we are in good shape financially. It's safe to say we are more financially stable than other engineering and surveying firms in Alaska because we have a lot of cash.

Through these pages, you will learn about what the company has invested in, what cool and different projects we have done during this odd project era, what we are doing to continue to prosper

financially, and what some of the employees have done in the community and their life.



TRIMBLE S7 THE SURVEYOR'S ROBOT

EXCEL

Written By:
Frank Bell & Brendan Welsh

The new Trimble S7 Total Station BELL has recently purchased combines scanning, imaging, and surveying into one powerful solution, and effectively reduces the number of instruments required on the job site to perform all data capture. It is capable of creating 3D models, high accuracy visual site documentation, point clouds, and more. Most importantly, it allows for seamless integration with our Trimble GNSS receivers and software, and can all be operated robotically from the same tablet controller in the field, making our survey crews much more efficient and cost-effective.

The S7 comes with an improved version of Trimble's VISION technology for robotic control, scene documentation, and photogrammetric measurements. It has superior

accuracy at long range, and offers a complete field-to-office solution for quick data capture and processing. Using it, our construction survey crews in Anchorage have already

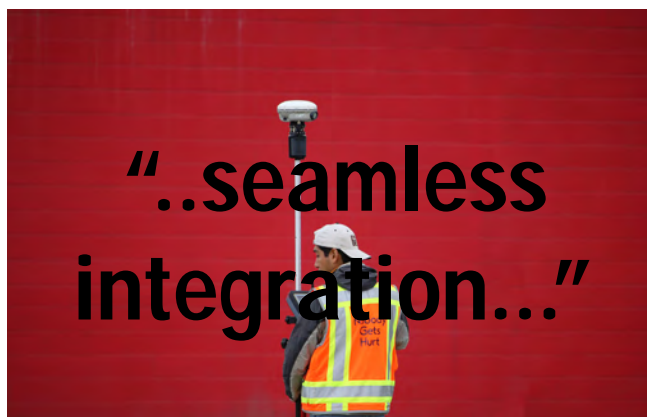
**"..seamless
integration..."**

experienced a significant increase in efficiency, accuracy, and data integration. It is yet another step we have taken to maintain an ongoing presence at the forefront of technology in the field.

BELL also recently acquired a new application called Trimble 4D Lite. This cloud-based monitoring solution is designed

for engineers, scientists, and surveyors to perform campaign monitoring of time-data series without the need to integrate directly on-site. Trimble 4D is designed for monitoring of dams, bridges, landslides, mines, and other man-made improvements using data integrated from many different types of monitoring sensors.

These data can be analyzed and visualized on a variety of interactive charts and plots, and easily displayed against a backdrop of maps, plans or photographs. The cloud-based storage of data creates the opportunity to virtually share the data and the analysis with other engineers, scientists, and clients. Trimble 4D Lite is the next level of data monitoring and BELL is one of the first in the state of Alaska to offer this unique solution.





Projects, People!

Here is a list of all BELL's active projects:

Surveying

Whittier Monitoring Wells	Surveying continued...
West Anchorage Roads Improvement	HSM Elevations at DS5, DS7, B-Pad and X-Pad
Municipal Entitlement Survey (ASLS 2012-08)	Lateral Line Surveys at B, X and DS7
AFC Tract 26 (ASLS 2012-30)	GC2 Hazard Alert Drawing Updates
Crazy Horse Pad	N-Pad Snake Pit GLT Elevations
GCI Surveys (ADL418572)	V and L Pads Mods 516 & 516A Quarterly Subsidence Surveys
Halliburton Deadhorse Plat (ASLS 2014-49)	Slope Stake Spine Road - GC2 access to M Pad access
Brooks Range Camp SLEV	GC2 Burn Pit / NGL Flare Subsidence Survey
Sag River Reservoir Plat	2016 Wellbore for R, S, W and Z Pads
Wells Fargo Surveying and Grading	N-Pad NMS804 (MI Line) Cut and Pup
Alaska LNG Meteorological Tower	2016 Road Upgrade GC2-M Pad Construction
Merrill Field Improvements	
Put23 Mine Site Drainage Plan	
FS3 STV/IP Support	
Sag River & West Dock Bridge 2016 PM	
G&I MTS Pits Oily Waste Management	
Vehicle Bridge Overload Permits	
CCP CGF Facility Siting Construction	
FS2 Maintenance Scan MOC Review	
FS2 Maintenance Scan Processing	
Culvert Permit Drawings & Culvert Install	
Culvert Installation (Oxbow Rd and Spine Rd)	
PBOC Wing C & E Subsidence Study	
WDSA Underground Drawings Update	
DSM Underground Hazard Dwg Updates	
GPS Equipment Control Sim Cards	
DS12 SWI Line Replacement Wells 02 and 30	
2016 Phase 1 VRS Implementation	
VRS Early Works Technician	
PSI Containment Pit Design and Installation Support	

Civil Engineering

AWCC Various Projects
Blessed Sacrament Civil Design
Dowling Warehouse
RWC Platting, zoning & platting
ASRC Barrow Garages Civil Design
Sag River Reservoir Plat
AWCC Access Road Upgrade
Wells Fargo Survey & Grading

3D Scanning

GC2 Wet Gas Laser Scan & Modeling
FS3 Wet Gas Laser Scan & Modeling

Mechanical Engineering

North Slope Maintenance Facility





911, Where's Your Location: Testing The Accuracy

BY PEARL-GRACE PANTALEONE



When you dial 9-1-1 for an emergency, you expect first responders to come to exactly where you are within a matter of minutes. This urgency expectation has been embedded in our culture since we were children.

I don't know about you, but I was quite the rebel as an adolescent. One summer I got bored when the adults were at work, so I tested my skills of how fast I could 1) get my cordless phone, 2) dial 9-1-1, and 3) hang up right away just so I was prepared in a real emergency. Well, that process was repeated over 10 times.

About 15 minutes later, I got a knock on my door. It was Officer Locke. My heart sank. I grew up in a small town, so I already knew who he was. In Alaska's Capital, everyone knows everyone.

I was embarrassed because my dad's high school friend, Officer Locke, showed up just to see if everything was all right. But I was even more embarrassed that I had been careless, not hanging up in time for them not to trace my call.

Now, as adults, we see from time to time, sirens in our rear view mirrors, and pull over to watch them zoom by. Most times, the dispatcher on the phone will ask for a location, but in those times a cell phone is used or no one can talk, it can be tricky to trace. Knowing the exact coordinates is so important, because in some cases, it can be a matter of saving a life.

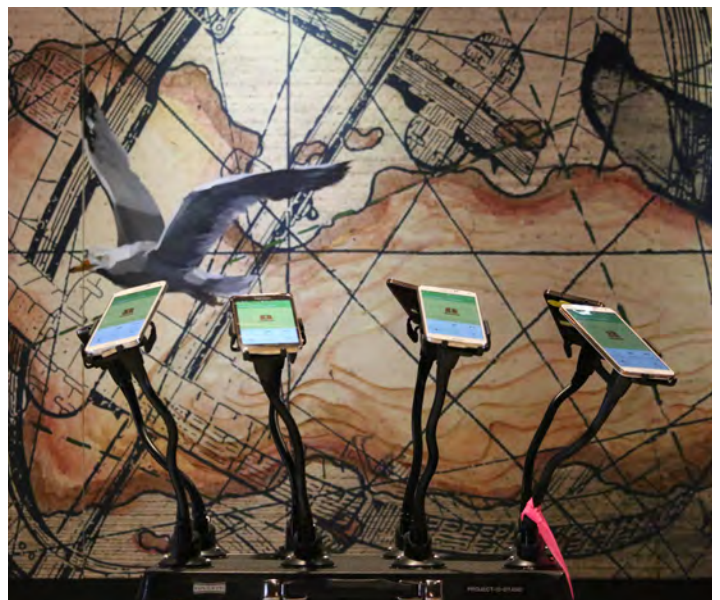
In March, BELL was contracted out by LocationSmart, a firm in Southern California specializing in location technologies spanning

indoor and outdoor use for any device. They have tested the accuracy of cell phone 9-1-1 calls all over California, and this year they made their way up North.

Our Anchorage crew conducted indoor geodetic surveys of 15 different buildings in and around

the Anchorage Bowl. This project consisted of determining the precise coordinates and elevation of selected test locations within buildings identified by LocationSmart.

LocationSmart set up bases of eight different cell phones and called 9-1-1 simultaneously while





we tested points. The cell phones reached a controlled, automated number specifically designed to conduct these experiments. However, during one location, these cell phones called the real dispatch. Luckily, no police officer showed up and they stopped their testing immediately.

Anchorage Assistant Party Chief, Werner Macedo, lead the field crew effort for all 15 buildings hand-picked by LocationSmart. Werner had the pleasure of working with several different surveyors on this project including Greg Bea, Terence Doocey, and Mathew Malnoske. The crew successfully collected and verified points from the following buildings:

1. Loussac Library
2. Eagle River Rent-A-Can
3. Chugiak Wonderland Emporium
4. Hotel Captain Cook
5. BELL & Associates Office Building
6. Fairview Recreation Center
7. Anchorage Senior Center
8. Dena'ina Civic and Convention Center
9. Three Bears Alaska
10. Anchorage Museum
11. Native Village of Eklutna
12. Alaska Center for the Performing Arts
13. Anchorage City Hall
14. Alaska Airlines Center
15. Towne Place Suites by Marriot

Some of the struggles our crews encountered were line of sight, multi-path in an urban environment, accessibility to the locations chosen by the client, and coordinating

with security. The two biggest challenges were security and people. Some of the buildings had security protocols that had to be followed slightly delaying schedule, and in some cases pedestrian flow caused a delay. In particular, the Captain Cook Hotel was hosting a Conference, and people would come flooding the hallways we were surveying during their break and lunch periods.

Werner says this was an enjoyable survey as, “we got to go to many ‘behind the curtain’ (literally as was the case at the Performing Arts Center) spots that the general public don’t have access to.” He shares that it was very interesting to observe the public and listen to some of their comments. “For example,” Werner says, “they were asking what surveyors were doing inside the buildings!”

Who knew testing 9-1-1 calls as a child turned into us writing a proposal and get this job of testing 9-1-1 calls as adults?



Terence Doocey surveying the Dena'ina Center

Werner Macedo & Mat Malnoske surveying the Anchorage Museum





Thank you for all those employees who have served BELL
all the long years! This Quarter we recognized the
following individuals' work anniversaries:

APRIL

Christian Foster, 13 years
Terence Doocey, 2 years

MAY

Bob Bell, 42 years!
Kevin Chiasson, 10 years
Gregory Bae, 1 year
Thomas Elsenbast, 4 years
John Tippin, 4 years
Chris Burt, 17 years
Thomas Bouwens, 7 years
Frank Bell, 1 year
Liz Burt, 2 years

JUNE

Stewart Lakin, 2 years
Tim Barnhart, 10 years
Victor DeWilde, 8 years



EMPLOYEE SPOTLIGHT: ALVIN HYMES

The Man behind the PEN. The story behind BELL's Controller, and who actually cuts our checks.

Born and raised in Jacksonville, Illinois Alvin Hymes, CPA always dreamed of coming to the Last Frontier. Growing up on a farm, it was only natural for him to develop a love for the outdoors and animals. After graduating with a Bachelor of Science in Biology from Western Illinois University, Alvin headed to Alaska. Talking with the locals in Fairbanks, he decided to spend the one year of residency required to work for the state taking classes at UAF. He then became a biologist for ADF&G in the summer of '75. One of his very first projects landed him in Emmonak, Alaska and that is where he met Molly Hootch.

"**THE** Molly Hootch," Alvin explains. "She was the most important and influential Alaskan at the time and I had no idea." Hootch's name led a list of plaintiffs in a 1972 lawsuit against the Alaska state-operated school system, and she became the face of rural education. The lawsuit contended the school system was violating the Alaska Constitution and the U.S. Constitution by failing to maintain a public school system open to all children.

The success of the "Molly Hootch Case" resulted in the construction of high schools in each qualifying village throughout Alaska.

Molly and Alvin corresponded with each other for four years before actually being together due to her village life and his wildlife biologist life. The downturn in the Alaskan economy forced Alvin out of a job and they moved back to Illinois and then on to Bemidji, Minnesota for the next 35 years.

Alvin got his Bachelors of Science in Accounting from Bemidji State University in 1993, and started working for an local accounting firm. On his first day of the new accounting job, Alvin picked up a mechanical pencil from the store across from his work.



Molly carved his name on the little black pen in November 1993. They've always wanted to come back to Alaska, and in 2014 they had the opportunity to do so.

So they saddled all their belongings and moved to Alaska. Dreaming of living in Palmer, a place that resembles the life on the farm down south, they soon realized that accounting opportunities were only in Anchorage.

"I could have retired there in Bemidji," Alvin laughs. "But I wanted to keep working." Alvin still holds that

monogrammed pencil in his hands to this day — even on his first day of the job here at BELL. A few months ago the pencil gave out. It stayed with him through his first accounting job to quite possibly his last.

Interesting Facts:

1. Alvin is very active in his church. Over the years he has held many roles including an Elder, a Trustee, a Preacher, a Deacon, a Treasurer, & a Bible School Superintendent.
2. He was and is very athletic! He was a 1st round qualifier in the Illinois High School State Championship for the 100-meter dash!
3. He was nominated and placed in the Who's Who for Information Technology Magazine.



Employee

NEWS & ANNOUNCEMENTS

[PAGE 8]



with lidar.

A New Design Tool

It is also increasingly used as a design tool for engineers and architects, says Chris Burt, a civil engineer with Bell, formerly F. Robert Bell & Associates and CMH Consultants.

"The data is in such detail that you can easily fabricate complex objects," says Burt, who has been using 3D scanning techniques since 2002. "Conventionally, it's very difficult to measure how a pipe is bending, but with laser scanning, you've got the whole thing scanned. They can get really exact pieces. You're getting so much detail on even really complex shapes that you can copycat shapes precisely."

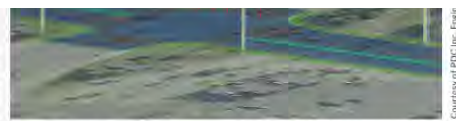
When Burt started working with laser scanning, most of the applications were in the oil and gas fields.

"In these facilities, they often need to replace or repair parts, but they can't shut it down and let everything cool off," he says. "With a laser scanner, it lets you get all those measurements from a safe distance without shutting anything down. Then they go and design the part. Then you only have to shut down once to replace it."

Other times, it's not possible to safely access the area, whether it's a super-hot piece of moving machinery or a fragile piece of architecture, he says.

A few years ago, "back when we still got snow in the winter," he says, he was called to measure an old trestle at Hatcher Pass that was starting to collapse under the weight of heavy snow.

"They needed us to do a historical as-built survey," Burt says. "They weren't sure if it was going to last another winter. It was on the side of a hilltop and falling apart. We were able to go and scan from all around it from the surrounding hillsides. We made



Courtesy of PDC Inc. Eagle

a list of materials for them and measured things, like what size the corner bracing was, without having to go and touch the trestle."

The amount of data generated by the scans is staggering, Burt says. That's one of the reasons it has taken years to be accepted for more mainstream uses, but today more software companies are making their programs more streamlined and intuitive.

Depending on the density of the scans, each one can create from 30 million to 150 million data points. But what used to require a supercomputer can now be done on a laptop.

"Each one of these points has a unique x, y, z point data, so it's collecting data at a massive rate," he says. Setting up common points to tie the multiple scans together can create a 3D rendering of an object. Using a CAD program to create a model, a scan can be used to create almost a Google Street-view view of a project.

"It makes it a pretty powerful tool," Burt says. "If you're just turning around and looking at that 3D data, you can make a pretty powerful presentation tool, and it eliminates a lot of confusion for the design team. It's got all the electrical and pipes and structural information together, and now they can all look at the same thing."

Julie Stricker is a journalist living near Fairbanks.

Examples of 3D design using data collected by PDC Inc. Engineers using mobile lidar.

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Alaska Business

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1) SCANNING, SCANNING! Chris Burt took a tour of Romig Middle School's classrooms on May 11th. First seeking out more information about a Design-Build on the gym, Chris was then asked to share 3D demos in the 8th grade classes. The kids at the ASD thought it was cool to be scanned as they posed in their "dab" dance positions.

2) BELL'S MARCH MADNESS Bracket Challenge winner is Mathew Malnoske! Mat chose North Carolina as the 2016 NCAA March Madness champions. Having doing this bracket challenge with other organizations and friends, Mat has been correct 4/5 years! He was going to pick his team, Duke, but changed it last minute to the Tar Heels.

3) INNOVATIVE LEADERSHIP Pearl-Grace Pantaleone serves as the Outreach Chair for the Young Professionals Group in Anchorage. This year YPG hosted their very first Young Professionals Summit. With a sell-out crowd, the Summit featured two full days of workshops and breakout sessions all encompassing their conference theme.

4) WE'RE FAMOUS! A shout out goes to our 3D Scanning Guru, Chris Burt, for being featured in Alaska Business Monthly's April 2016 Magazine! After putting an advertisement for 3D scanning in ABM, we got noticed and were interviewed for an article a month later. We hope to spread more love about 3D scanning in Alaska!



Employee

NEWS CONT.

5) GC1 CLOSE OUT.

This month we finally closed out a very exciting project on the North Slope. BELL laser scanned all the modules of GC1 and tied all of the gathered laser scan data to the local plant control network and provided a complete ACAD model of all of the elements within each module. This opened the door to work on GC3 & FS2/3. Good work!!!

6) MAY THE 4TH BE WITH YOU

And also with BELL. On May 4th the Anchorage office helped clean up the town. In our second annual participation in City-Wide Clean Up, we made a way around the building. All who help were: Alvin, FT, Kyle, Pearl-Grace, Andy, Dave, Vivian, Greg, Chris F., and Werner. Thanks for giving back to the community!

7) WHOSE YOUR DADDY?

Congratulations to the Welsh family on their new addition! Brendan and Abby Welsh welcomed their first born, Evelyn Lemmel Welsh, into the world on Monday, April 25th. She came in a healthy 7 lbs 2 oz and measured 19-3/4 in. Congratulations to the new Mom and Dad! We wish Evelyn a life full of health and happiness!

8) HOME, SWEET HOME

Another BELL employee announced that they purchased a house within the year! Pearl-Grace and her husband bought a fixer-upper in South Anchorage. They are excited to make memories in their first single-family home. Don't worry if you find paint in her hair—she and her husband are just doing the renovations themselves.





Cyber Attacks

By Christian Foster
CYBER INVESTIGATOR

EMAIL SCAMS & HACKS

As many of you know, I teach IT courses as an Adjunct Instructor at the University of Alaska Anchorage's Community and Technical College. At the school, we teach that the weakest, most insecure link in our IT infrastructure is the end user. You and me.

Two of the most successful types of IT attacks often happen due to hackers using a so-called "social engineering" attack: **Ransomware and Phishing.**

RANSOMWARE is when an attacker inserts scareware (usually some sort of pop-up or web page that looks intimidating); screen lockers (which locks the user out of their computer, requiring a re-installation of the operating system); or—worst of all—encrypting Ransomware (which encrypts all your data files with strong encryption and requires the payment of a ransom).

BELL has had experience with the first two types of Ransomware attack, but has not experienced an encrypted Ransomware attack. We do use strong security measures; however, it is possible for social engineering attacks to introduce Ransomware into our systems. Social engineering can be very subtle requests for information via emails or phone calls; or well-placed and concealed malware on a web page.

PHISHING is the 21st century equivalent of the Nigerian scam, only much more subtle. It normally shows up as a reasonable sounding email requesting information or money for a legitimate reason.

Spearphishing is a more sophisticated version of such an email and it appears to be from someone you know. Only it is not. Email was originally designed with no security features and scammers take advantage of this fact and can craft emails that look completely valid but are meant

to either get your money or compromise your otherwise highly-effective security systems.

BELL has experienced a number of these types of scams via email within the past few months. Most go directly to the Spam folder, but in case some go through—either delete it if it sounds suspicious or ask for another person in the office's opinion. One person in the Anchorage office was email corresponding with "Bob" saying he needed a wire transfer of a large sum of money. Suspicion of his language in the email lead to investigation, and indeed it was not Bob. The email was being re-directed to a woman in the Midwest.

PROTECT YOURSELF

To prevent any kind of catastrophe, guard against Spam. This calls for being especially cautious of emails that come from unrecognized senders, emails asking you to confirm personal or financial information over the Internet, or make urgent requests. And do NOT click on links, download files, or open attachments from an unknown sender. This is bad.

Common sense and skepticism are the best tools for the end user to avoid either Ransomware or Phishing attacks. That and having effective backups of your data. Prevention is better than reaction.



Christian Foster, M.S. serves as BELL's Information Technology Manager, and has been with the company for over 11 years. He also is an Adjunct Professor at UAA for the Community and Technical College and teaches difference course including: Local Area Networks, IT Essentials, Virtualization, Server Operating Systems.



MARKET THEORY

KYLE GRIFFITHS has contributed to the Blunt BELL Bulletin in our March 2016 Issue, where he wrote about being environmentally sustainable. Kyle has written several publications including **Corporate Sustainability: Integrated Performance and Reporting** as well as **Financial Services Firms: Governance, Regulations, Valuations, Mergers and Acquisitions**.

Evaluating market conditions is an all-consuming job. Analyzing market capitalization, price-to-earnings, enterprise value, book value, free cash flow to equity (FCFE), free cash flow to the firm (FCFF), return on invested capital, dividend model, or momentum trading (gut instinct, and trends) can give wildly different results and meaning to the valuation story being told. That is why valuation, although built on the back of mathematical theory can be more art than science. Moreover, the further you stray from value investing the more the stock market can feel like an elaborate gambling scheme.

Choosing the right company to invest in can be challenging for someone new to valuation so why invest in one at all? There are many instruments offered in the market place today that are low cost, no load which give the investor complete

diversification in bond, or equity markets. Diversification is key for a three reasons: 1) mitigates firm specific risk, 2) is only subject to systematic risk, and 3) can yield the lowest risk (standard deviation) to reward (return). Index funds also beat

“...wildly different results and meaning to the valuation story being told.”

the majority of mutual funds and recently Warren Buffet had a bet with a hedge fund on whether the hedge fund could beat an S&P 500 index fund return since the 2008 financial crisis. The hedge fund lost.

However, if an investor wants to build his/her own portfolio employing

two or three different methods and adding more than ten companies with low correlation can start to imitate a fully diversified index fund. From the methods listed FCFE, dividend model and P/E analysis can provide three distinctly different and comprehensive approaches to building your own portfolio which has the potential to beat the market. Do not forget when valuing a company to perform a SWOT (strength, weakness, opportunity, and threat) analysis, as well as paying attention to systematic changes e.g. moves in interest rates from the Federal Reserve.

If anyone is interested pursuing investments I would be more than happy to elaborate on all of the methods listed and talk about general market theory.

BELL is about to embark on a new technology direction with BP. BP has approved the funding and chosen BELL to implement the new Virtual Reference Station (VRS) network to be created across the Greater Prudhoe Bay (GPB). The VRS is separated into 2 phases with Phase 1 to be operational by the end of 2016. Phase 1 will consist of 5 new VRS stations with 3 of the new VRS stations being dual-role stations and be part of the US National "Continuous Operating Reference Station" (CORS) network that will transmit differential corrections back to the National Geodetic Survey (NGS) in Washington DC. These CORS stations will allow users to utilize the data from the CORS stations to accurately position any survey point collecting GPS static data (4-hour minimum data collection) to the NAD 83 reference frame. The VRS stations will allow users to "tap" into the transmitting differential corrections from the VRS stations to any remote GPS receiver for accurate Real-time Kinematic (RTK) positions.

This is a definite step forward for BP as all major pads, well sites and facilities on the Slope were never really "connected" to each other and had a small amount of positional error between them. Now with the new VRS NAD83 corrections being utilized from one homogenous reference frame the positional accuracy between areas will be much more accurate. It will also allow our survey crews to connect with the VRS network through a cellular connection for accurate positional data anywhere within the GPB.

We are very excited about the opportunities for different applications for BP once the full Phase 1 and Phase 2 VRS system is up and running in 2017. BP would like to immediately move into the direction of more machine control (dozers, loaders, rigs, vehicles) for single operators performing tasks and also move towards having a Drill Rig guidance system where the VRS system would assist a drill rig driving down the road centerline in a more efficient and safe manner.

BELL is well positioned to provide this technology expertise and maintaining the VRS system throughout the coming years which only strengthens the working relationship between BP and BELL. We will have one dedicated employee, Kevin Chiasson, take on this task and we are confident of Kevin's abilities to provide his knowledge and dedication to meet our first timeline of a 2016 Phase 1 implementation of the VRS system.

Exciting days ahead!



Virtual Reference Station

By Steve Manser

