



BBD joins AWS Partner Network

**Successful automation for
Vodacom**

**Blockchain: Fintech's new
buzzword**

**Holiday competition:
Win a GoPro Hero 5**

We are hiring

BBD BULLETIN

DECEMBER EDITION // 2017

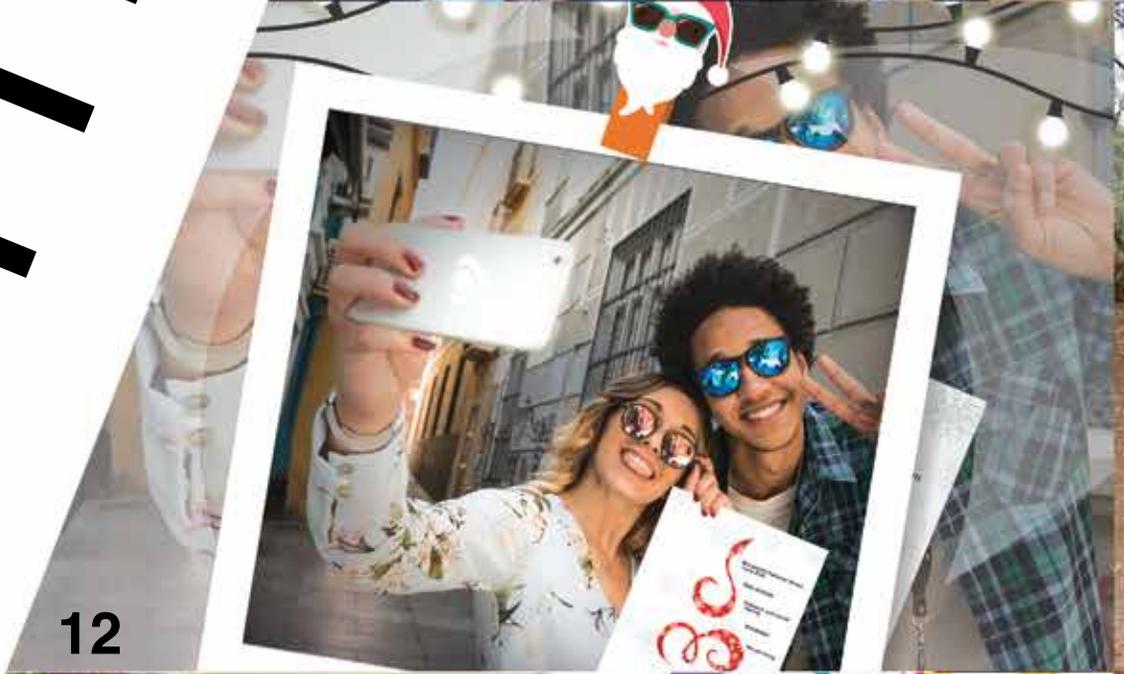
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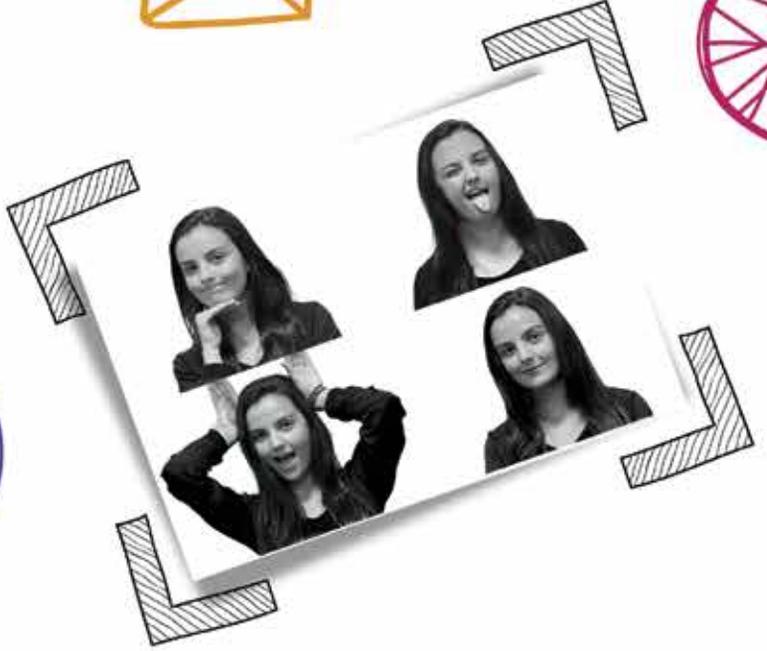


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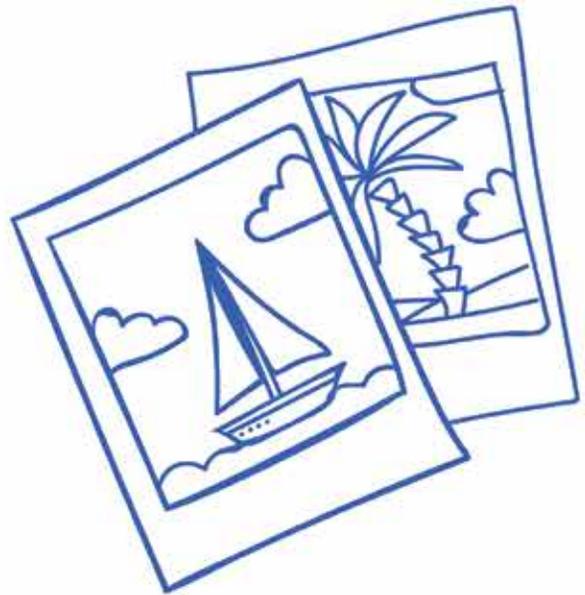
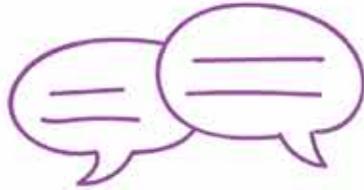


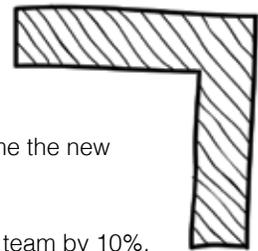
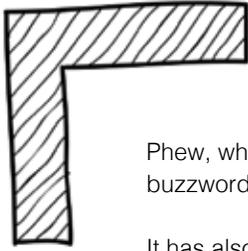
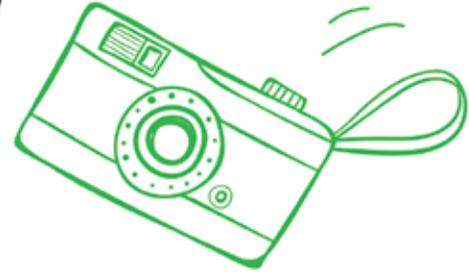
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NOTE FROM THE ED





Phew, what a year! JZ reshuffled the cabinet a few times, Bitcoin became the new buzzword, and the Springboks had a few ups and downs of their own.

It has also been an eventful year for BBD. We've grown our BBD Group team by 10%, had yet another successful Esc@pe event and we've continued to deliver amazing value to many of South Africa's top companies.

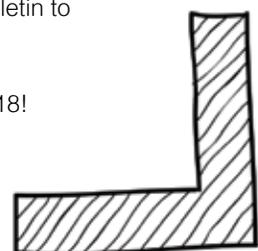
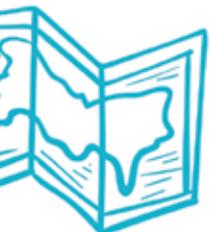
One achievement we are very proud of is BBD joining the Amazon Web Services (AWS) Partner Network (APN) and achieving APN Standard Consulting Partner status. To achieve this rating BBD had to undergo certified training and meet requirements that demonstrate AWS expertise, capabilities and engagement across the AWS ecosystem. Read more about this in the AWS certification article on page 8.



Other highlights in this edition include a look at blockchain and how it could lower banking costs for consumers, how our MSDF partnership is enabling smarter education in South Africa and we showcase BBD staff hiking, jumping out of planes and surviving Warrior Races.

We are just as excited for the end of the year as you are, but we still have one request - please remember to send your ideas and suggestions for the BBD Bulletin to marketing@bbd.co.za.

Thank you BBD for yet another kick-ass year and we look forward to 2018!



Whether we know it or not, we are already reliant on the cloud. Simply put, the cloud is an evolution of what most organisations already have, the ability to run software solutions that customers can access via the web or their phones. The cloud also ensures that all work from emails to backups are not lost. Yet, cloud computing solutions can do much more than allow us to access our emails from anywhere.

BBD is creating an innovative solution to provide transactional capabilities for clients to use the cloud to set up sophisticated point-of-sale devices for informal shops. The solution has been designed for Selpal and is targeted at the South African mass market. It allows customers to purchase goods with money kept in a cloud vault (or with cash) while earning loyalty points. Customers can also buy electricity, airtime and even pay for their DSTv subscriptions.

South Africa has typically underinvested in IT, but that is changing. Gartner reported in their Worldwide IT Spending Forecast that IT spending in South Africa could total R266 billion in 2017, increasing by 2.4% from 2016. Software development spending is predicted to be the best-performing segment, with a 13.2% increase year-on-year.

With connectivity no longer a restrictor and market expansion and data centre infrastructure creeping into rural South Africa - companies need to be working in the cloud. Below are three easy steps to set your organisation to work in the cloud.

1. Migrate your essential consumer software solutions into the cloud

Long gone are the days when financial directors had to be coerced into making buying decisions. Small companies can now run complex server solutions

such as corporate grade email without their IT teams needing to know about installing, supporting or backing up these technologies. Today it can all be easily done with the cloud, along with a 50 gig or more cloud mailbox and an even larger archive mailbox.

2. Use cloud-based solutions for the likes of CRM and HR

Migrating or switching your CRM, HR and timesheets to cloud-based solutions is a great way for SMEs to push above their weight class. Many low-cost IT solutions that require no upfront capital expense exist.

SMEs should consider moving their website (often their most critical digital asset) into the cloud or be a cloud provider, instead of self-hosting or paying a rack provider for space that their IT department needs to maintain. The cloud can provide a lower total cost of ownership, while also providing higher availability and better protection against threats such as Distributed Denial of Service (DDoS) attacks.

3. Build new solutions in the cloud to run on Azure or Amazon Web Services (AWS)

Building new solutions for the cloud is where BBD can assist SMEs, as we can revolutionise your IT. SMEs are often forced to have an ever-increasing human back-office. Cloud-based services will allow you to have a test and production environment with a server, uptime support and some elasticity for a low monthly cost. You won't need to install software updates or worry about anything other than your next great business idea.

In today's highly digitalised work environment, no organisation can afford to not be in the cloud.

Dieter Rosch
BBD CLOUD CHAMPION

MOVING TO THE CLOUD

Cloud computing is transforming the way companies interact with their customers, with 93% of South African companies currently either implementing or planning the initial phase of their cloud strategy.



bbd joins aws Partner Network



BBD recently joined the Amazon Web Services (AWS) Partner Network (APN), achieving APN Standard Consulting Partner status.

This status is awarded to professional services firms that assist clients to design, architect, build, migrate and manage their workloads and applications on AWS. To achieve this rating, we had to undertake certified training and meet requirements that demonstrate AWS expertise, capabilities and engagement across the AWS ecosystem.

Achieving APN Standard Consulting Partner status is very exciting, as AWS is one of the leading global cloud computing platforms. This certification proves our competency in the field and shows we have the skills to deliver cloud based platforms – providing our clients with a scalable, reliable and low-cost set of remote computing services.

The impact of cloud computing on how companies are interacting with their customers is clearly evident, with more than 90% of South African companies currently either implementing or planning the initial phase of their cloud strategy.

One of the key benefits of AWS cloud infrastructure is the ability to deploy new applications instantly, scale up as the workload grows or scale down as demand diminishes. Clients of AWS only pay for what they want, a nice benefit considering South Africa's tough economic climate.

Given how rapidly technology is evolving and disrupting industries, partnering with an organisation with the right skills

to deploy customer solutions on AWS will be a quick win to put an organisation ahead of competitors. APN Consulting Partners are given access to a range of resources and training to support clients in deploying, running and managing applications in the AWS Cloud.

We have certified people as AWS Certified Associates and AWS Certified Solutions Architect Professionals. Currently in South Africa there are very few Solutions Architect Professionals, so we are very pleased to have this capability in BBD. An AWS accreditation validates advanced technical skills and experience in designing distributed applications and systems on the AWS platform.

Gartner ratified AWS in their 2017 Magic Quadrant for Cloud IaaS – positioning AWS as the most mature, enterprise-ready provider. They also highlighted how AWS has the deepest governance capabilities for large resource groups and user bases.

Leveraging the flexibility and low cost of the AWS cloud offering has put BBD well on the path to strengthening our skills and experience on the platform. Our AWS partner status assures clients that we have the required skills and support to deliver business critical solutions that are reliable, secure and cost effective.

As one of only a handful of South African companies with AWS Standard Consulting Partner status, we are looking forward to doing more work with local organisations to enable them to take advantage of all the AWS benefits.

Dieter Rosch
BBD CLOUD CHAMPION



Peter Searle, CEO



David Tayler, CEO



Strategic acquisition of Fusion Software grows our technology solutions

Earlier in the year we (BBD Group) acquired a 26% stake in Fusion Software, a South African company providing integrated software solutions and business management tools.

Having worked with Fusion Software since December 2014, we have seen that not only are they a cultural fit, their leading business intelligence and process improvement solutions will enable us to add enterprise resource capabilities to our offerings.

This acquisition is part of our strategy to strengthen our position as one of South Africa's leading ICT companies. Fusion Software provides dynamic and flexible solutions, geared for companies seeking more agile ways of working in today's data prolific world. At BBD, we believe in offering real commercial value to clients through a collaborative approach and this is closely aligned with Fusion Software's desire to provide solutions that truly impact a client's business, through integrated software solutions.

David Tayler, CEO for Fusion Software, explains partnering with BBD is an exciting step for the company. "This new partnership will help us expand our products and our brand into national and possibly international markets." Established in 2002, Fusion Software has clients across a range of sectors from finance to manufacturing and engineering. "We are very proud of our truly South African solutions and are looking forward to doing innovative work with BBD."

Through this acquisition we will continue to deliver the simple, easy-to-use solutions that deliver benefits to our clients on a daily basis.

Peter Searle
BBD CEO



TAKE BBD WITH YOU ON HOLIDAY

The BBD Bulletin would love some fresh air.

Whether you are climbing Mount Everest, swimming in Hermanus or braaing at home - we want to know.

Take a selfie with the **Bulletin** wherever you are this festive season, and post it on Facebook, Twitter or Instagram with the **hashtag #BBDbreakaway**.

The most creative post will win a **GoPro Hero 5**.

**Competition ends 31 Jan 2018

Winner will be announced 2 Feb 2018



WE ARE SOCIAL

Don't forget to engage with BBD online and if you see a post you like - share it with your comments



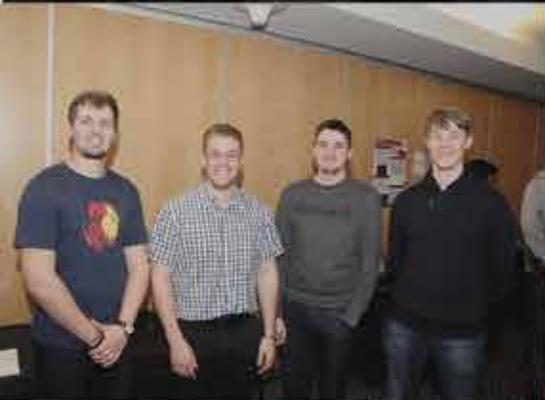
esc@pe

2017



esc@pe is BBD's very own technology conference and the 2017 event was done in style! 4 tracks with 3 presentations each covering software development, business analysis and project management topics. The amazing work BBD does is showcased at this event.







BBD Cloud Masters Challenge

esc@pe

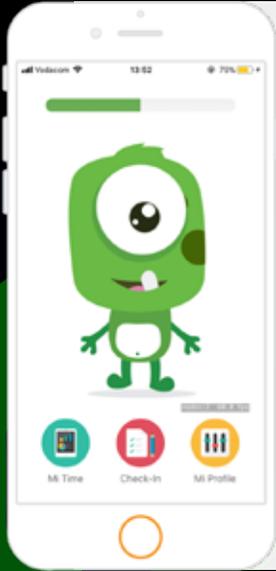
2017

Instilling a culture of learning is important at BBD and what better way to learn new things than through a challenge.

Recently we hosted the second BBD Cloud Masters Challenge to inspire staff to devise an innovative reward programme utilising a cloud-native solution. Starting in 2016 with seven teams, this year's challenge showcased the innovative thinking BBD prides itself on: 10 teams were tasked to create and define a non-monetary rewards system.

More constraints were imposed on entrants this year to narrow their focus and provide participants with a greater opportunity to succeed. Entries were judged on quality and uniqueness of the idea, the ability to solve the problem through software, the quality and functional implementation of the solution and the use of technology in solving the problem.





The **winning team's Play BB Gotchi** was a well thought out problem solving solution, that is simple with the potential to be implemented.

The team wanted to make mundane tasks that must be completed in a work environment fun. Through gamification, onerous tasks become entertaining e.g. mobile check-ins at work events, tracking time and skills and voting for peers.

Basing their BB Gotchi character on the nineties Japanese digital pet known as a Tamagotchi, which needs to be "fed" through the completion of tasks. Instead of an old-school handheld mini computer, the app runs in the cloud and off a mobile device.

Team BB Gotchi explained as they're all techies who write code, having to creatively conceptualise an idea to solve problems on a large scale was new to them and taught them about customer centricity.



Different teams to last year competed and in order to give non-developers (such as analysts and designers) an opportunity, a coded solution wasn't a requirement. Not all teams comprised of colleagues who work together and this socialising was an important element of the challenge, giving people who might never meet, an opportunity to work together and become friends.

Other winners included:

Second Place: Planet Express - BBD Bucks. An internal currency that rewards employees for interacting with the company. The web and mobile app aims to increase feedback loops, knowledge sharing and company-wide participation.



Best documentation: Lucky Team - Productivity Vehicle. This cross-platform cloud-based productivity app uses gamification to motivate employees. The cloud-based app helps the user keep track of the time they spend on tasks and results, with only a small amount of data kept on the user's computer. Users get rewarded for completing timesheets.



Best presentation: 11 till 3 - bBucks. A Google Cloud Platform developed cloud native app that acts as a community hub, fusing training and the company network with an innovative rewards programme. Users earn points from different challenges in five separate streams – health, social, education, recognition and a custom track. Built to allow interaction between the entire company, users can spend, save or even bet their bucks as they'd like.

The enthusiasm evident among the young entrants only means good things going forward for BBD's culture. They will grow into the future innovators to ensure we remain the leading software development company in South Africa.

Rory Preddy
BBD ATC TEAM



DEV

OPS

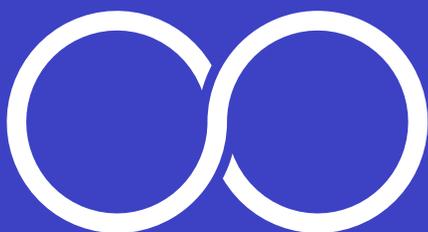


BBD HOSTS MICROSOFT'S DONOVAN BROWN

BBD recently welcomed Microsoft's Donovan Brown for a talk on DevOps. The Principal USA DevOps Manager on the Cloud Developer Advocacy team, Brown is known as the man in the black shirt and was greeted with great anticipation.

Since DevOps is such a highly overused term, Brown came up with the definition of DevOps in Microsoft as "a union of people, processes and products to deliver continuous value to our customers." He pointed out that while DevOps might have nothing to do with development, it is required to increase the capacity of a solution when there is going to be a known run on a website. An example can be an annual sale or similar type of event, whereby the operations environment needs to be upgraded or scaled to meet the actual demand on the system.

However, no code changes are made to accommodate these requirements, hence Brown's insistence on including "value to our customers" in his definition rather than using the more traditional "good software".



DevOps in Microsoft is “a union of people, processes and products to deliver continuous value to our customers.” - Donovan Brown

Brown works on the Microsoft Visual Studio Team System (VSTS) product team. If you last used team foundation server (TFS) 2005 or TFS 2008 and remember it as being a rather large and heavy application lifecycle management (ALM) tool, then you should probably have another look at the latest version of VSTS. It's grown up and is now a real contender, supporting GIT and enabling you to pick up your code from GitHub. It has a mature continuous integration (CI) pipeline and a very mature continuous delivery (CD) model.

Attendees were in for a treat as Brown set up a complete Java Spring Microservices environment, with a full CI and CD pipeline. When he asked members of the audience, there was

consensus among those present that a task like this would take an experienced Java developer nearly four hours to achieve. Brown demonstrated that by using his “Yeoman” script in Microsoft PowerShell, he could set up a complete Java Spring boot end-to-end CI/CD pipeline running in VSTS in about four minutes - minus the time he spent explaining what he was doing. This left all the Java attendees sitting upright in their chairs with their socks blown off! He finished his demo by showcasing what VSTS could do with Docker.

BBD hosted this talk in conjunction with the Developer User Group and the Jozi-JUG and Jozi.JS meet up groups and it was an honour to host an international speaker of this calibre.

Peter Scheffel
BBD NEDBANK TEAM



L – R: Mike (BBD), Rory (BBD), Donovan Brown (Microsoft), Tony (BBD)



BLOCKCHAIN

could make bank reconciliation easier,
lowering banking costs for consumers



In South Africa, the South African Financial Blockchain Consortium (SAFBC) and Springblock are allowing local financial institutions to create the necessary network to work together to discover the potential for Blockchain usage in South Africa.

Blockchain is a buzz word that isn't going away. Yet few people in the financial industry truly understand the technology, and the implications thereof.

Blockchain is an open, distributed ledger that can record transactions between two entities efficiently and in a verifiable and permanent way. Theoretically, reconciliation done by the intermediaries that currently process these transactions for us such as lawyers, brokers and bankers might no longer be required - as individual entities could freely transact with little friction. This is the promise of Blockchain.

Despite the potential for massive impact, as a new market infrastructure or foundational technology, Blockchain still has a long way to go prior to becoming ubiquitous. The adoption will be gradual, so don't expect a sudden disruptive big bang.

Like many in the global financial industry, BBD's financial sector clients are exploring Blockchain as the next big technological advance. The truth of the matter is that we don't yet have the how or the why, as multiple versions of the tech are still in the experimental phase. Banks are not at the stage where they fully realise the business case. More experimentation and understanding is needed before any bank can claim to be significantly reducing costs at this stage.

It is important to understand that Blockchain needs a whole network of participants to work together, as the real benefit of the technology is only found at

scale. Bluntly put, there is no advantage to one person or one bank verifying a transaction for themselves.

So far it is not only start-ups launching themselves into the blocksphere. Unlike start-ups, banks are a part of existing communication networks which exist on a global and local scale. SWIFT, for instance, is the most dominant alliance between global banks. It allows for banks to move money and transactions between the different global branches of different banks. It forms a communication community for transactions. SWIFT is currently running a Blockchain proof-of-concept with 22 global banks to help with Nostra account monitoring.

In South Africa, the South African Financial Blockchain Consortium (SAFBC) and Springblock are allowing local financial institutions to create the necessary network to work together to discover the potential for Blockchain usage in South Africa.

Blockchain has the potential to effectively lower the cost of banking, as a significant percentage of a bank's efforts is spent on reconciliation. With Blockchain that reconciliation would theoretically be instantaneous, effectively lowering costs for the bank and consumer.

While this sounds very positive, the reality is that a lot must still be determined before the technology can become an industry norm. Below are three areas of concern that must be addressed before the industry can move forward with this digitally disruptive technology.



Speed and scalability

For the digital Blockchain ledger to reduce the cost of reconciliation, a vast number of transactions must be processed each second. Currently, the Bitcoin Blockchain can only process around seven transactions per second, which is slow when compared to the tens of thousands of transactions processed by the card payment networks today. There are many initiatives trying to address the speed and scalability constraints (these also require compromises) e.g. the size of the blocks can be increased, compression added, cryptography and cross Blockchains. An initiative called the Lightning Network (LN) is trying to address the speed issues in blockchain.

Additionally, there will be many different Blockchains for different purposes, as to solve end-to-end use cases these blockchains will have to be able to be interoperable, not easily done at present. Aion Network is working on solutions in this space and worth looking into.

Regardless of any possible solutions currently being aired, the speed for transaction processing is a big issue that must be resolved.



Privacy, security and regulation

Blockchain technology can allow every participant in the network to see each transaction that is taking place (not the specifics, but the fact that a transaction is taking place). The question that needs to be asked is "would you be happy for everyone to know exactly how much you're being paid a month for instance?". It is therefore important for us to understand what information is being communicated, who can see it, and what the implications are on regulation such as PoPI.

On the flipside, everyone can see all the Bitcoin transactions ever done, but you can't see who the actual entity is behind the transaction. This leads to the cryptocurrencies being used for black market transactions.

Additionally, your security is only as secure as your private key, lose that and someone can take all your money. Digital wallets and cryptocurrency exchanges have also been hacked with millions of dollars stolen, and given that they are unregulated you have no recourse to the local regulators.

Private as opposed to public blockchains in the financial services sector is one way forward. Private networks allow only a set of specific participants to have access and knowledge of the transactions taking place.

A start-up company called Zcash is doing great work in this area of blockchain using zero-knowledge cryptography.



Clear business case

Maybe the most important question that will need to eventually be answered is, "Will this technology save people money, and can you prove it?", and are the incumbent financial institutions the right stakeholders, or will the start-ups trying to disintermediate them and succeed first.

As with most changes there will not be one clear winner, but we expect to see a growing number of specific use cases to be tested in the market resolving specific problems.

Although it is only in the experimental phase, and offers huge promise, the industry is rife with innovation around Blockchain and its possible uses. It will be a while yet until Blockchain technology is ubiquitous, and before any of that is possible, the concerns pointed out above will need to be addressed.

The end game should be good for the consumer, but that benefit will not be seen in the short term.

Matthew Barnard
BBD STD BANK TEAM



Creating a world-class solution to compete with the best

BBD WTC intern Thulasizwe Mavuso was part of a team that recently won the Digital McKinsey Future Hack hackathon.

Teams comprised a mix of companies and had to identify a societal problem and come up with a solution using technology. Thulasizwe and his team had an idea to create a platform to monitor a person's blood alcohol content (BAC). If your BAC is over the legal limit the app will notify Uber, Taxify or your next-of-kin and avoid you driving while under the influence.

This great initiative won the team first place and an all-expenses paid trip to Facebook's 2018 F8 conference taking place in California.

We are proud to have such amazing young talent at BBD.

Jolene van Heerden
BBD MARKETING TEAM





SOFTWARE CYBERSECURITY

Protecting sensitive client information has never been more important, as data breaches and hacks become more prevalent.

The heated commentary on South Africa's Cybercrimes and Cybersecurity Bill, the petition against it and the increased risk of global cyberattacks, have placed large enterprises under pressure to ensure they have the most stringent cybersecurity.

The 2017 Ponemon Cost of Data Breach Study shows that data breaches cost South African companies R32 million and response fees cost R8.1 million on average - with malicious and criminal attacks being the most common data breaches in South Africa.

How would a big business go about ensuring their data is protected? Despite the myriad of tips floating around on the internet, your first port of call is to understand the intricacies of cybersecurity.

"To protect your client information, you need to make sure that everything has been coded defensibly."

Most organisations don't realise how very broad a topic cyber security is. The first step is to understand the three cybersecurity levels organisations require:

- 1. Infrastructural security:** protecting your systems and networks from viruses, spyware, worms and hackers
- 2. Informational security:** protecting physical and digital data from unauthorised access, use, disclosure, disruption or modification
- 3. Software security:** an organisation would hire a specialist software development firm, such as BBD (bespoke software solution specialists), to ensure that the coded software is not the weak point in a company's security. The last thing any business needs is for their software to be low-hanging fruit for unwanted parties

Below are a few quick tips on protecting sensitive client information:

- » Quantify and understand your security exposure
- » Restrict unnecessary software on your systems
- » With cloud computing and the risk of threats at an all-time high, treat everything as hostile
- » Secure your admin pages, even from your own users
- » Look at having your internal departments treated as hostile to each other by your firewall. This will mean you have smaller "inside" fenced areas on your network
- » Have tough access control, limit your access environment
- » Regularly change passwords and use salted password hashing and encryption (and obviously don't write them down)
- » Limit uploads to reduce that threat vector
- » Most importantly, educate your staff on everyday cybersecurity habits
- » To protect your client information, you need to make sure that everything has been coded defensibly. Without this, your enterprise could be at risk.

Michael Geyser
BBD ATC TEAM

DATA ANALYSIS

Bringing **learner data** to
life for **South African**
education officials

Imagine if South African educators could use learners' data such as achievements to better support instructional decision-making.

Thanks to the power of data analysis, this is now a reality. The Michael & Susan Dell Foundation (MSDF) launched a partnership in 2012 with the National Department of Basic Education to enable South African schools to translate data into clear, actionable insights for use by education officials.

The Data Driven Districts (DDD) initiative is striving to enable data to be accessible and actionable for 80% of South Africa's 12 million learners by 2018. By correctly utilising educational data, learner outcomes can be improved. This is of particular importance if South Africa's poorer communities are to be uplifted through education.

BBD assisted by developing an online dashboard to enable easy access to the learners' data. The dashboard is a simple visual tool for officials and educators which shows how districts, circuits and schools are performing on learner achievement, attendance for both educators and learners and promotion.

The project has enabled schools and district officials to view relevant education data immediately and graphically via a dashboard, to enable education-related data to be captured,

extracted and consolidated more effectively. By allowing educators to make data-driven decisions to facilitate targeted interventions, they can effectively improve the educational outcomes of all learners in the school system. Potential problem areas can be highlighted to enable education officials to better decide where to deploy their resources, very helpful given these resources are limited.

The DDD project extracts data from the existing South African School Administration and Management System. This data is consolidated and aggregated to provide insights at all levels within the education system, from circuit offices all the way to national. By showing the data in a dashboard – principals, circuit managers and district, provincial and national staff can identify meaningful insights to assist in improving learner outcomes.

MSDF South Africa Country Director, Dean Villet, advises that the DDD project has collected data from over 19 000 schools and more than nine million learners. “The scale of DDD’s quarterly data collection is an incredible achievement in and of itself, however, even more impressive is that we now have over 6 000 schools submitting a full set of attendance, assessment and curriculum coverage data every single week. Our initial research leads us to believe that there is not another education system in the developing world that is achieving anywhere near that scale of near-real time data submission.”

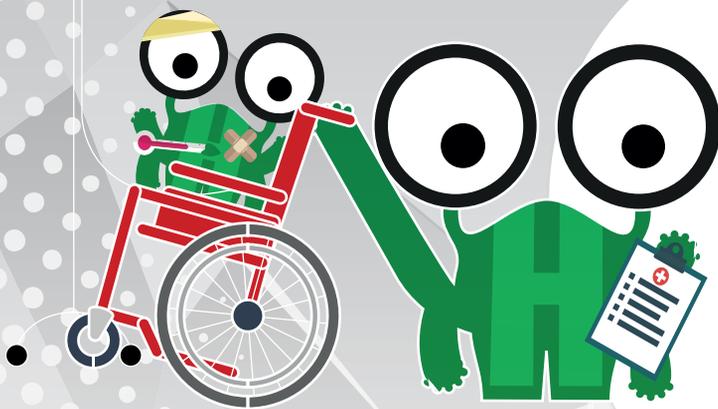
Villet says the DDD Dashboard can provide data and information from country level right down to an individual learner level, to enable a school's management team as well as district and provincial officials to provide the support required, at the point in time it is needed. “The programme is active across seven provinces, with training and support being offered to education officials to ensure that data is collected, quality

assured and then used in service of improving learning outcomes across the system.”

By putting in place a tech-enabled tool to visualise education data in a dashboard, education outcomes can be improved through fact-based insights driven by real data. The application of analytics in an educational context is beginning to show real promise in South Africa.

Gavin Tafjaard
BBD MSDF TEAM

b b d
**AWARD
NOMINATIONS
2017**

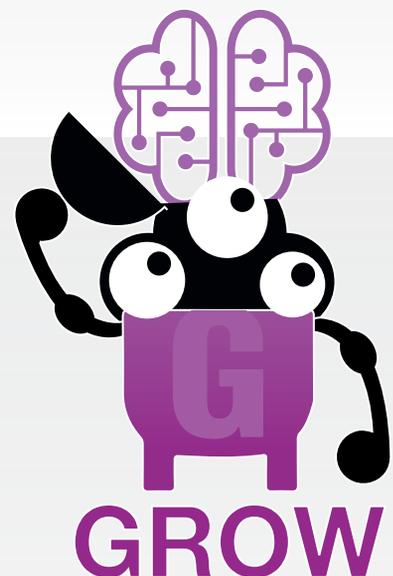


HYPE

Helping your people

It's the end of our **2017 awards season** and once again the BBD Award Nominations showcased **exceptional staff members!** We gave away some great prizes, donated to amazing charities and next year we'll do it all over again!

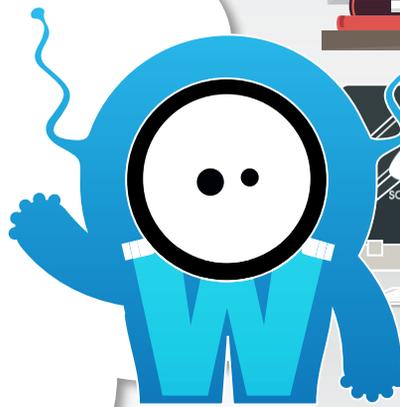
Our people are what makes us great. We could not have grown into **South Africa's leading software dev company** without each and every one of them.



GROW

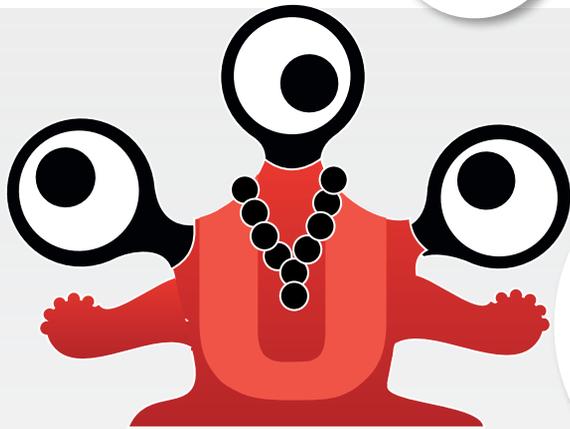
**Grasps opportunities
and wisdom**

We have repeatedly seen staff go the extra mile, using their inherent knowledge of our clients' sectors to build lasting relationships. **Their passion drives BBD.**



WIT

Whatever it takes



UBA

Ultimate BBD
agent

The **2018 Award Nominations** is open to everyone in BBD. Nominations run from **February to October** and 2 winners will be chosen each month; with 3 grand prize winners chosen at the end of the year. If you work with someone great, **remember to nominate!**



STEALTH

The **silent** operator



Feb

Annelien Jankowitz



Feb

Kabelo Laka



Mar

Tarina Van Zyl



bbd
AWARD
WINNERS
2017



Mar

Louis Lewies



Apr

Lerato Masekwameng



Apr

Keabetsoe
Mautla



Apr

Ravindra Gadiparthi



May

Vaughan Quinton



Jun

Bandile Ndlela



Jun

Keagan Thompson



Jun

Thomas Bezuidenhout



Jul

Cosmas Mudondo



Jul

Johnathan Botha



Aug

Christo Pieterse



Aug

Werner Beukes



Sep

Andre Prinsloo



Sep

Deepak Jha



Sep

Bongwiwe Mhlanga



Oct

Tanya Jennings



Oct

Butha-Buthe Matsumunyane



Oct

Ashish Hake





bbd

bierfest

2017











SUCCESSFUL AUTOMATED TESTING



BBD has been moving Vodacom's testing from manual to automated, radically cutting reporting time from five days to a few hours.



As this was a new service being provided by BBD, we had to understand the necessary requirements as they emerged, together with gaining an in-depth knowledge of the process being implemented. Hence, it was a complicated cycle of acquiring the knowledge and then implementing it.

To develop a working automation system the first step was to not only understand the product and the product language, but also what level of testing was required by Vodacom. Building the framework from scratch meant the BBD team had to understand how the solution could be tested based on the tool they wanted to use. Once this initial hybrid framework was in place, Vodacom could then add in their requirements and the test team could accommodate these through a new page object model (POM) framework. Having to develop, receive requirements and implement was one of BBD's main hurdles throughout the process, but one we more than overcame. Despite the learning process being undertaken by both Vodacom and ourselves, we maintained an excellent working relationship, so much so that Vodacom requested the BBD team work on other new projects as the testing was stable.

One of the key reasons automation has been successful at Vodacom is due to the site stability. Automation allows for increased work speed, faster defect finding, regression prevention and the ability to free up team resources. We are excited at the possibility to roll out automation to other clients and proud of the BBD Vodacom team's triumph with automation.

BBD is part of a growing global movement towards automated testing. As the lead BBD automated tester at Vodacom, I've been able to experience the exciting career opportunities this can open for one such as developing your personal skills, showcasing your execution abilities and being able to work on a solution end-to-end. I'm thankful to BBD who has journeyed with me, enabling me to become a leader in the client space and to continue to grow and improve.

Prasad Bhogi
BBD VSP TEAM

BBD BEST TECH PEOPLE



WHY HAPPY EMPLOYEES ARE INTEGRAL TO AN ORGANISATION'S SUCCESS





Why happy employees are integral to an organisation's success

Earlier in the year BBD ranked number one in MyBroadband's 2017 Salary Survey for the IT sector, indicating a high employee happiness rating. Over 3 000 South African IT professionals were surveyed.

BBD was also awarded a platinum seal in Deloitte's 2017 Best Company Survey. This determines employees' engagement with their organisation and measures the attractiveness of the organisation to both existing and potential employees.

We're delighted with these achievements and proud and thankful of people enabling us to achieve results like this. In today's very challenging business environment, one of the few truly competitive advantages at an organisation's disposal is their people. Not only does a business need the best people, they must be happy and engaged.

The Deloitte platinum seal is the top award and ranks higher than Deloitte's bronze, silver and gold awards. BBD's Deloitte Best Company Index was 72.63 against a benchmark of 62.2, while the Engagement Index was 76.52 against a benchmark of 67.78. These results indicate that our employees are happy and believe the benefits of working at BBD are better than any other employer.

While the MyBroadband results ratify Deloitte's results and are very pleasing, there is no substitute for people in the business talking to each other to understand what challenges are being faced and how to address them. BBD could not have grown into South Africa's oldest and largest independent custom software developer without our people. The quality of BBD's employees is unrivalled, they are always willing to go the extra mile and their inherent knowledge of our clients' sectors has ensured lasting relationships with clients.

Having entered the Deloitte Best Company Survey for the last five years, BBD believes it provides absolute independence and anonymity for all employees in their responses. In addition, the survey allows BBD to benchmark against an international base, across a large group of employees.

While these achievements are very rewarding, the real value lies in our people representing the BBD brand in every way. We focus 100% on getting the best people to deliver value-adding systems to our clients. This involves a real passion for making sure our people are the best and have everything they need to remain the very best tech people in the world.

Peter Searle
BBD CEO





Make every day Mandela Day

“What counts in life is not the mere fact that we have lived. It is what difference we have made to the lives of others that will determine the significance of the life we lead.” Nelson Mandela

Life is not easy for most, so it is imperative that just like Nelson Mandela, we try to lend a helping hand to those around us who can't do so for themselves.

For this year's Mandela Day the BBD Vodacom Application Maintenance team collected items for the Tumelo Children's Home in Ivory Park, Tembisa. A refuge for the mentally and physically disabled, we named our campaign Make Them Smile, as we wanted to make a difference in other people's lives.

We believe raising awareness for mental health issues in South Africa is important, as many children living with autism and other mental illnesses require better access to daily necessities.

Special thanks and a heartfelt gratitude to those who contributed to the success of this initiative.

Petunia Langa and Lavender Tsotetsi

BBD VSP TEAM



L-R: Lavender (BBD), Petunia (BBD), Rifiloe Sindi (Tumelo Children's Home)

Transparent fee
structures for FSPs
in **South Africa**





Transparent fee structures are the way forward, and little by little South African financial service providers (FSPs) are moving in that direction.

Simply put, transparency amounts to clarity around investors knowing how much they're paying, what they're paying for and what the impact will be on their returns. It's clean, understandable pricing.

Although South Africa still lags the rest of the world, transparency is being supported by the industry, who are promoting trust between the financial services industry and retail investors. A key factor in the 2008 financial crisis was people not understanding the risks of their investments. Transparency tackles this as it enables investors to understand the products\instruments and assets they're investing in, the risks involved and the effect fees have on their investment returns.

Despite the overall consolidation in fee structures, a big reason FSPs are avoiding being too transparent is because it costs money to implement and often full disclosure is not required by regulation. BBD believes that not only do FSPs need to disclose costs transparently and correctly, they must accurately calculate these costs. That's the development effort and it's not easy to do.

The biggest problem is the lack of understanding on the investors' behalf. Even with long-term insurance and investment products often being sold together, there are discrepancies in the investors' knowledge. Investment products are generally quite well understood, but there is a lack of knowledge around the underlying instruments and the actual cost of the total investment. While investors are comfortable with long-term insurance products, the terminology used to present the fees is not that well understood. It's a conundrum that transparent fee structures can solve.

BBD's financial services industry experience incorporates insurance, investment and banking. Due to this combined knowledge of the industry, BBD has in-depth experience in understanding domains and either integrating solutions into the client's systems or creating new systems.

In this highly-regulated sector, facilitating the requirements put in place to ensure financial stability is crucial. BBD's best value offering lies in knowing how to unpack what is required and having the skills to develop and maintain a solution that facilitates the necessary regulations.

Ian Maas

BBD STD BANK TEAM

BBD WARRIORS IN THE FIELD

It was a great start to a Saturday morning, cruising down the N7 towards the Meerendal Wine Estate to join my fellow BBDers for the 2017 Toyota Warrior Challenge.

I arrived to find the atmosphere booming, music blaring, crowds cheering and commentators hyping. The BBD team (Charlene, Barbara, Faida, Earl, Lance, Werner, Michael, Rymert, Henko and myself) changed into our team shirts, showcasing our developer humour, while looking around and evaluating how ill-prepared we actually were.

Soon it was our starting time for the Rookie 5km with 10 obstacles. The track for the first half of the race was uphill, with uneven ground keeping you on your toes. The obstacles included leopard crawling, tyre climbing and a three-metre-high concave wall run. Anything to challenge your physical abilities.

After an hour of intense exercising (according to us at least), we enjoyed our well-deserved beers and frozen yogurts - quickly undoing any health benefits we might have had going for us.

It was an amazing day out and a fun way to share our BBD spirit.

Dylan Kron
BBD VSP TEAM



SHOUT IT OUT

Got something exciting to share with BBD?

Won an award, starting an exciting new client project
or have news to share?

Email marketing@bbd.co.za and we will shout it out!

```
// |  
// Code  
// Java  
}
```



20

17



This is one of many software conferences hosted in South Africa to train and connect Java developers and create opportunities in the tech industry.

The event is a mix of practical applications and informative talks by local and international experts in the field. This year the keynote speaker was Simon Ritter, previously the Head of Java Technology Evangelism at Oracle. He spoke about new features in JDK 9, such as modularity and Project Jigsaw. With lots more to tempt developers, Ritter did a whirlwind tour of what's in and what's out in JDK 9, leaving attendees ready to start with the latest version of Java.

As the lead organiser for AWS-Jozi and Jozi-JUG, I spoke on Amazon Web Services (AWS) and serverless functions for Java developers. Serverless architecture allows developers to focus on code and their business problem, rather than spending time looking after backend infrastructure. It can help developers build scalable, high-performing and cost-effective applications quickly. Together with AWS, it can make things easier and cheaper, while assisting to accelerate development of projects.

Rory Preddy
BBD ATC TEAM



Serverless architecture allows developers to focus on code and their business problem, rather than spending time looking after backend infrastructure





Bitcoin
ACCEPTED HERE

Cryptocurrencies

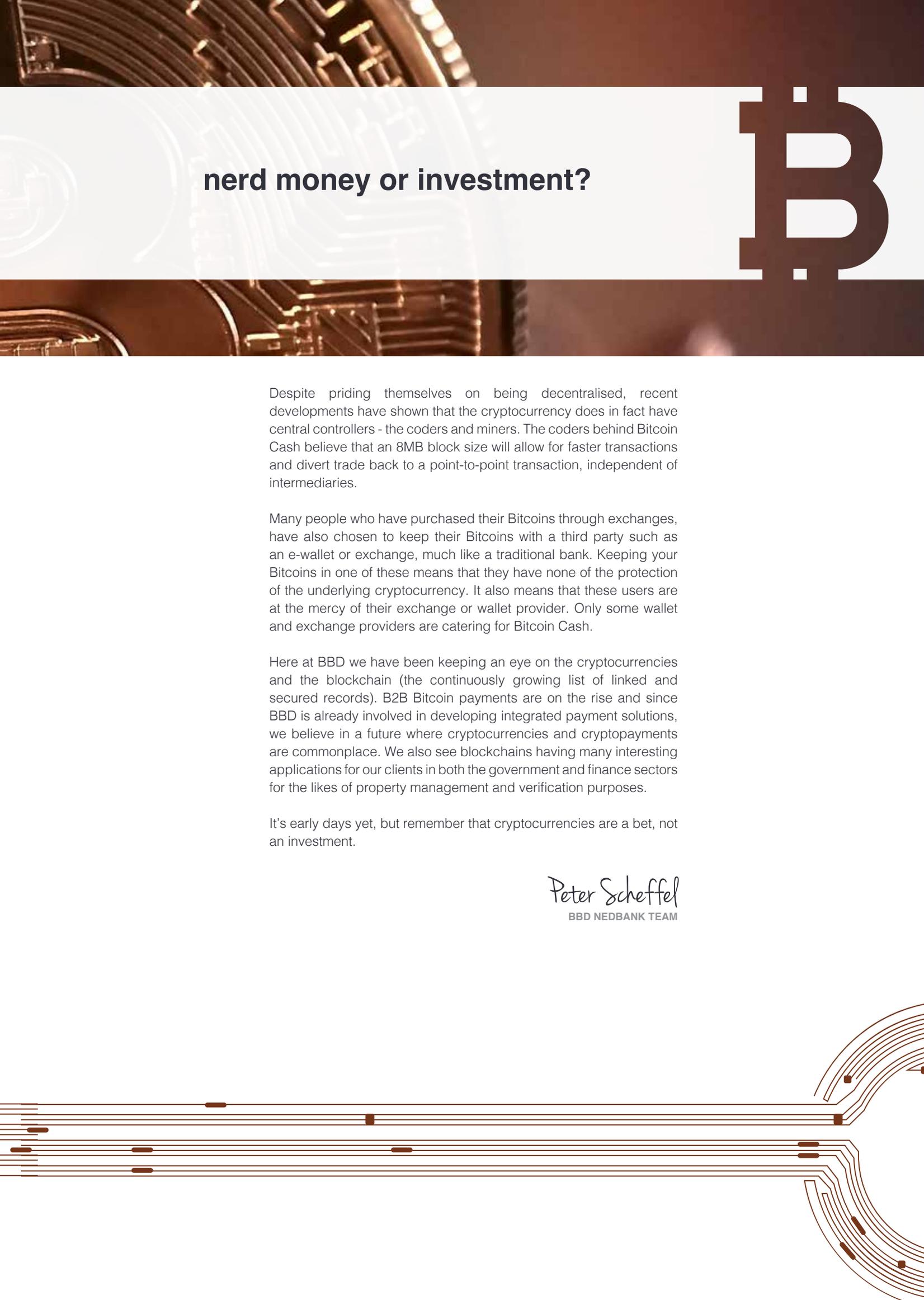
Bitcoin keeps on breaking record highs and one has to wonder if Satoshi Nakamoto ever thought this would happen back in 2008 when he invented the cryptocurrency as a “peer-to-peer electronic cash system”.

A Bitcoin clone, Bitcoin Cash, recently came into being when the coders and miners behind the decentralised cryptocurrency couldn't agree and split into Bitcoin Cash. Within 24 hours of trading opening, Bitcoin Cash was valued at more than \$24 billion.

In case you're confused about what exactly a cryptocurrency is, think of it as “digital cash”. No government, company or single entity administers cryptocurrencies. Transactions are kept secure through cryptography, allowing for individuals to send anonymous peer-to-peer transactions. Blockchain technology enables shared record-keeping and processing, to ensure no digital money can be copied or spent more than once. Essentially a person can purchase products directly from a merchant without an intermediary such as a bank or financial institution.

Bitcoin makes use of a form of mathematics that involves cracking codes. These codes are designed in such a way that they become significantly harder to crack over time and therefore require more computing time to crack. This is called mining. The total number of Bitcoins that can ever be mined is limited to 21 million and at 1 June 2017, approximately 16 million coins had already been mined.

As Bitcoin has become more popular, so the transaction processing speeds have slowed. This inability to scale or cope with high volume transactions (the Bitcoin network processes at seven transactions per second) was another reason for the establishment of Bitcoin Cash.



nerd money or investment?

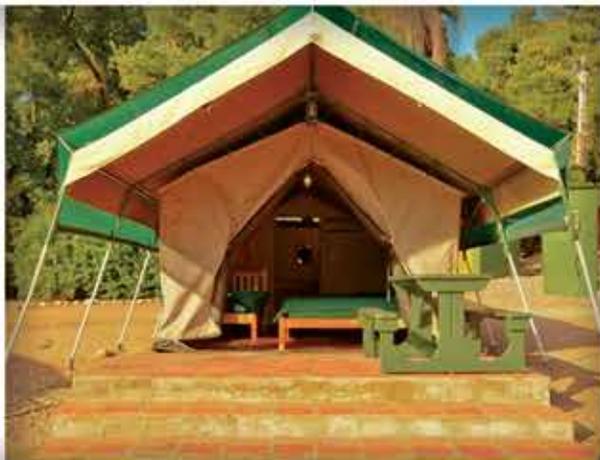
Despite priding themselves on being decentralised, recent developments have shown that the cryptocurrency does in fact have central controllers - the coders and miners. The coders behind Bitcoin Cash believe that an 8MB block size will allow for faster transactions and divert trade back to a point-to-point transaction, independent of intermediaries.

Many people who have purchased their Bitcoins through exchanges, have also chosen to keep their Bitcoins with a third party such as an e-wallet or exchange, much like a traditional bank. Keeping your Bitcoins in one of these means that they have none of the protection of the underlying cryptocurrency. It also means that these users are at the mercy of their exchange or wallet provider. Only some wallet and exchange providers are catering for Bitcoin Cash.

Here at BBD we have been keeping an eye on the cryptocurrencies and the blockchain (the continuously growing list of linked and secured records). B2B Bitcoin payments are on the rise and since BBD is already involved in developing integrated payment solutions, we believe in a future where cryptocurrencies and cryptopayments are commonplace. We also see blockchains having many interesting applications for our clients in both the government and finance sectors for the likes of property management and verification purposes.

It's early days yet, but remember that cryptocurrencies are a bet, not an investment.

Peter Scheffel
BBD NEDBANK TEAM





Glamping is the new camping

The BBD Cape Town team kicked off our team build at Waterval Country Lodge, nestled in the mountains just outside Tulbagh. On arrival, we were welcomed by our hosts and met Slow, our guide for the day. Yes, we made all the SLOW jokes known to man.

Slow split us into three teams, mixing up our day-to-day teams and giving us a chance to meet new colleagues. In true BBD spirit, we became instantly loyal to the new structure and vigorous competition ensued.

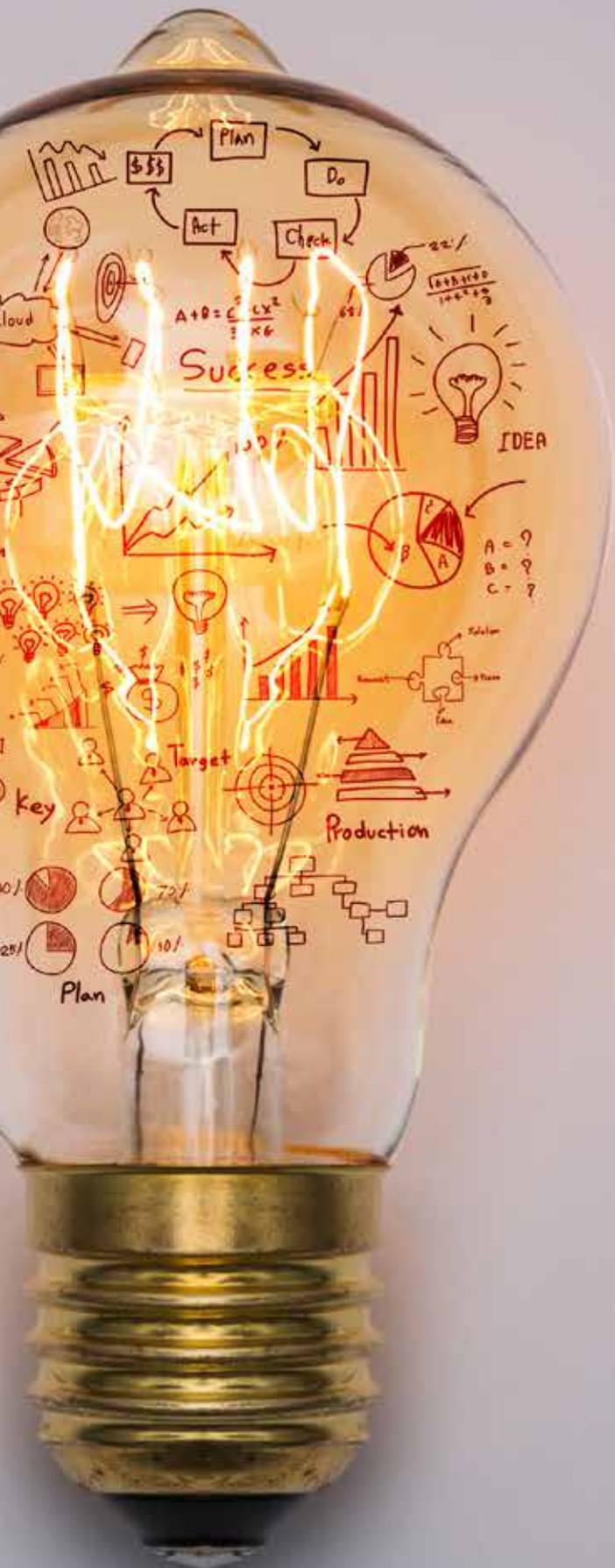
The first challenge was a physical brain teaser which resulted in only minor injuries. This was followed by a series of challenges from charades to obstacle courses and untwisting the human pretzel.

After the competitive events, we had lunch and around mid-afternoon the organised activities ended. At this point, some of the group returned to Cape Town, while the rest of us stayed on for the night. Apparently, the party wound down in the early hours, but I was long gone, retired to my tent. Did I mention we were all sleeping in tents? Very luxurious tents with double beds, air-conditioning, and en suite bathroom. Glamping!

Our final group activity the next morning was to pack Santa Shoeboxes for charity, which was a great end to yet another successful team build. Well done team!

Richard Dates

BBD SANLAM TEAM



ICT DEMAND OUTWEIGHS CURRENT AVAILABLE SOUTH AFRICAN SKILLS

South Africa is in an ICT skills shortage crisis and it's not going to fix itself. We need to recognise and develop talent from the ground up if we have any hope of beating the skills shortage.



There are highly skilled people in the ICT industry and South Africa needs more of these qualified practitioners.

Globally, the industry has been gaining steam as the need for web and mobile connectivity becomes a must. South Africa is no different. As per the 2016 WEF Global Information Technology Report, the South African ICT industry improved their 2015 ranking by 10 places, with the business sector providing the most momentum for the industry.

This demand for ICT services outweighs the available skill. Quite simply, there are highly skilled people in the ICT industry and South Africa needs more of these qualified practitioners.

Luckily, there has been a resolute response from ICT companies towards a substantial and sustained invigoration into developing the necessary skilled workforce. A quick search yields plenty of graduate programme results.

Yet every programme is not cut from the same cloth, nor do they offer the same level of consolidation and knowledge integration as BBD's three programmes.

As a software development firm that, for the past 33 years, has specialised in bespoke software solutions for businesses of every

size, we pride ourselves on our training initiatives that offer recent or prospective graduates the opportunity to dive into the ICT industry.

The programmes focus on complete workplace integration. There is no sitting around, our intakes work on real projects. They're a part of the BBD family.

The internship works through WeThinkCode, an education institution that BBD is proud to be a founding sponsor of. The magic of this course is that the students don't have to have any IT qualifications, and matric is not a prerequisite. South Africa needs to recognise and develop talent from the ground up if we have any hope of beating the skills shortage.

The bursary programme is for students working towards a degree in IT. After the successful completion of the degree, BBD offers an automatic permanent position.

Through partnerships with organisations such as WeThinkCode, BBD can give real industry input in the hopes of enabling better IT practitioner development for South Africa's future.

Peter Searle
BBD CEO

STELLENBOSCH UNIVERSITY CAREER DAY

Recently Charlene, Rudolf, Arjen and I participated in the computer science career day at Stellenbosch University. The mission was to:

- Interact with the students and introduce them to BBD
- Discuss technology and latest trends
- Recruit talent

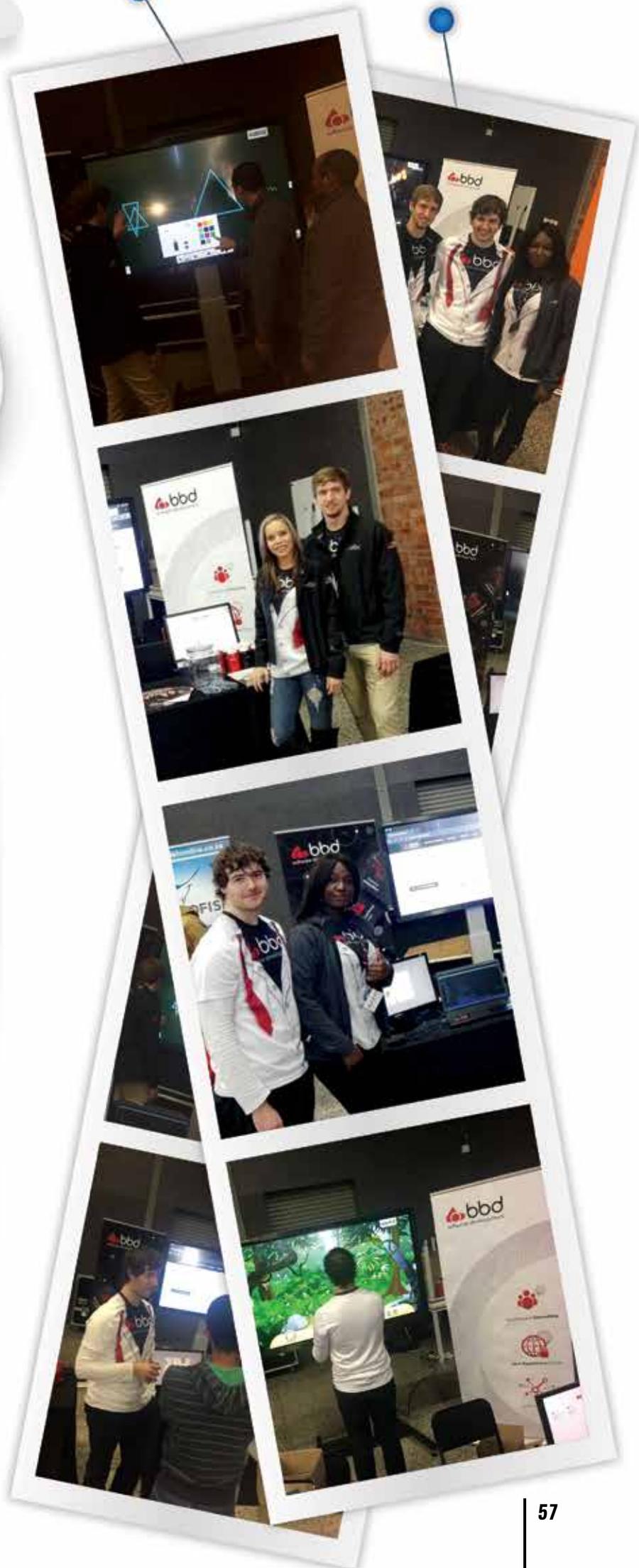
The preparation leading to the career day was simple, with both developers (Arjen and Rudolf) discussing a gaming idea operated via voice command. Two days later, they birthed a grid-based game, using the AWS Lambda function to implement game logic and update UI. The voice interaction was provided by AWS Alexa. Prep work was done at Charlene's house and we went through the logistics for the event, ran a few functional/performance/integration tests on the game and on Alexa and prepared our pitches.

On the day, the game on the big screen proved to be a great attraction and very popular with the students. We moved around the event venue engaging with the students through our BBD graduate and bursary programme brochures. A specific #BBDStellenboschUni was created to get students to retweet and engage with the BBD brand. Through a Twitter wall we could showcase all Tweets using this hashtag.

Charlene and I were very pleased to see women interested in pursuing a career in IT and were bombarded with challenging questions about our experiences as women in a male-dominated sector. We shared our career stories with them, emphasised the need for women in IT and encouraged all students to challenge themselves.

Faida Vandu
BBD VSP TEAM

bbd
develop





bbd Insuregroup

This year Insure Group Managers celebrate their 25th anniversary. Represented nationally, they're focused on the short-term insurance market and provide premium collection management, financing and other tailored financial services.

In August 2012 BBD was tasked with rewriting the legacy Epic system, with the new Xcelerate system going live at the end of December 2014. Since then, the BBD team have been hard at work resolving issues and enhancing the system with new features, while optimising a system that continues to grow.

One of the more interesting features of our development environment is the continuous integration (CI) environment put in place by BBD. The CI environment uses GIT, Teamcity, Fake and Octopus – allowing BBD to test each enhancement separately in their own Docker containers. After successful testing, we cherry-pick which tickets to merge into the UAT environment for integration testing and further deployment to the production and later the live systems.

Our current focus is moving the complete system to Azure, which will open up more possibilities such as data warehousing and business intelligence. We're also excited to leverage the scalability of the Azure platform, allowing us to increase or decrease resources where and when needed. In the near future, we're hoping to add automated testing to the project to decrease testing time and reduce regression.

Robert Schuitemaker
BBD INSURE TEAM



In keeping with today's digital world, OUTsurance are moving from a traditional call-centre environment and embracing digital channels to expand their reach and offer customers more convenient ways of interacting with them.

As part of a major rebrand and new corporate identity, BBD helped the company launch a brand new mobile application, which offers customers numerous innovations e.g. completing windscreen claims without having to interact with the call centre, adding new items to policies with just a few clicks and being able to include a photo of the new item to the policy. BBD continues to work on new products and features, which will be available via the mobile application soon.

Behind the scenes, BBD has also been assisting OUTsurance in automating build, deployment and testing processes and implementing error reporting, monitoring and analytics. In parallel, the OUTsurance group has launched a new financial services product called OUTvest. This allows customers to quickly build their own investment plans by interacting with a robo-advisor through a new mobile application.

Ivan Lazarov
BBD OUTSURANCE TEAM



we are **hiring!**

If you are interested in joining the **BEST** software engineers at SA's largest bespoke software development company, email recruitment@bbd.co.za now!

LOOKING FOR

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- » C# developers
- » Mobile developers
- » C++ developers
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- » The top software development employer in SA to have on your CV

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ECO WASH

clean and green

Get your FREE car wash at BBD

Need your car washed but don't have time over the weekend to go to the car wash? Don't worry, you can give your car that showroom look while being environmentally responsible. BBD operates ECO WASH each Friday on a first come first serve basis. Book your car in with Admin on Thursday.

Fast fact: ECO WASH uses only 300ml instead of 250l of water to wash your car.



bdd in the air

So, how do casual ideas transform from fantasy (aka cheap-talk) into life-altering reality? Well, let me tell you. One lunch a few BBD colleagues and I casually discussed how jumping out of a plane might be fun and without any real mental preparation, it was booked and paid for. This must mean BBD employees are by their very nature:

1. Risk takers, and / or
2. Adrenaline junkies, and / or
3. Too afraid to chicken out so we don't look like quitters in front of our colleagues

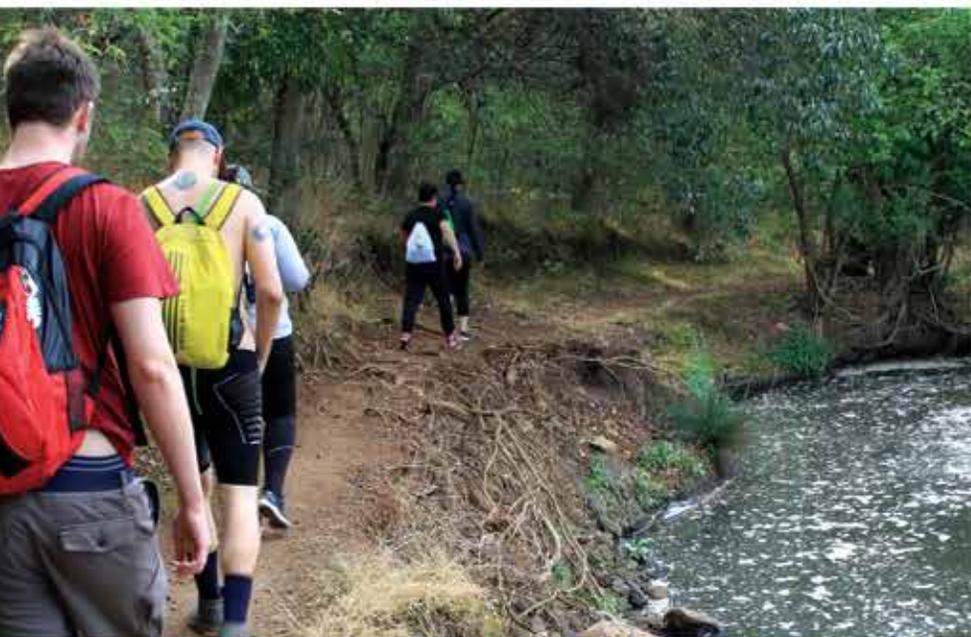
A few distinctly short weeks later and the time had arrived to make our way to Parys. We were suited up and given an instructional talk about what to expect and what to do during our tandem jumps. Paired with our skydiving instructors, we made our way into a small aircraft, with tiny windows we could look out of for the 20 minutes it took us to fly to the right altitude to jump.

The view in that sky was breathtaking and awe-inspiring but just as we became sufficiently distracted by it, we were reminded about the impending jump as the door opened and the cold wind hit our bones. It's go time! Strapped onto the instructor – we tried to remember our instructions: feet under the plane, head back and embrace the impending death, ah, I mean descent. The actual falling (screaming) part lasts about five minutes and we reached speeds of approximately 200km/h. Our cheeks flapped in the wind, deafening silence roared in our ears and we had to remind ourselves that breathing was still mandatory. This incredibly intoxicating experience was so freeing and passes before you know it started!

I'm so fortunate to have been able to experience this with my BBD colleagues, who I now call friends. We, the self-professed addicts, are already planning the next adrenaline-filled adventure.

Christina Zachos
BBD ABSA TEAM





VIEWS WORTH THE WALK

TEKKIES? ✓ Check.

OX-WAGONS? ✓ Check.

MANKINI? ✓✓ DOUBLE CHECK!

After a jam-packed year, it was time for the billing and marketing teams to get away from the hustle and bustle of the office. At the crack of dawn, we headed towards Harties to kick off our team build with a hike along the Hennops trail, followed by a pool party at the Oxwagon Lodge, where we slept in authentic ox wagons dating back to 19-voetsek.

We can't give away too many of our team build secrets, but take a look at what each team member had to say about the day.

Jolene van Heerden
BBD MARKETING TEAM

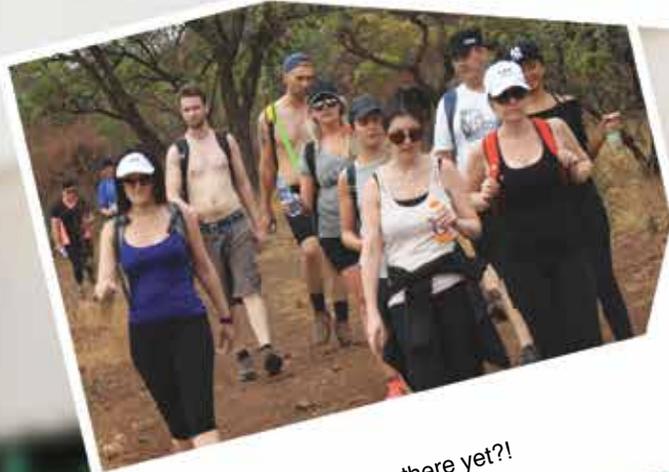




T Tough times don't last...tough teams do
Together **E**veryone **A**chieves **M**ore



B Was I drinking, meditating or both?



Stace Are we there yet?!



Katie We went. We walked. We won.
#TeamBond



Steph Who knew cows were so shiny?



Gerian The Hangover... BBD style



Shaun Fresh air, great company and champagne



Jolene This newbie joined one crazy team!



Peter Billing and Marketing. Drinking and hiking. Odd, but effective mix



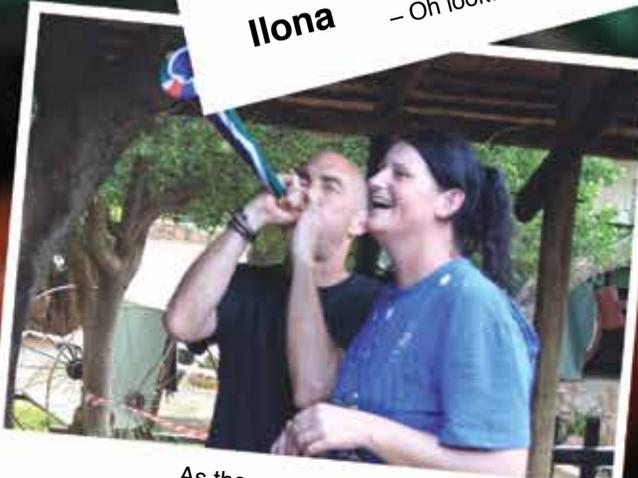
James The hangover wasn't as bad as the chafe



Ilona Let's have a potjie competition – Oh look! Shooters!



TJ If Peter (I mean HE) dive bombs me into the pool one more time, I'm going to claim for a clothing allowance!



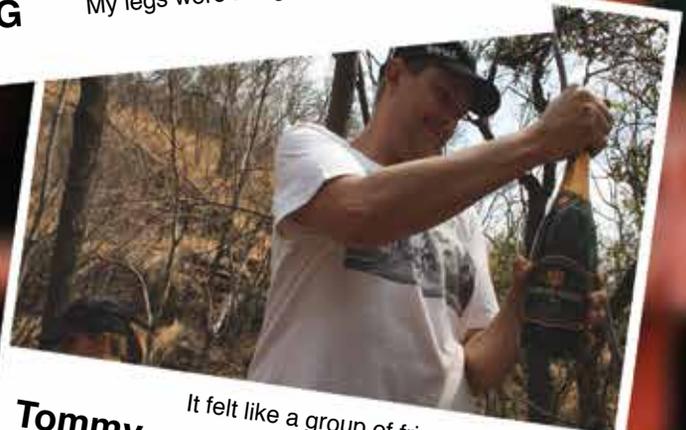
Marelyn As the proud owner of a new vuvuzela, my team definitely knows how to bring me out of my shell



G My legs were hungover



Lashley Camping is fun, but glamping is ten times better



Tommy It felt like a group of friends went back in time, with Kurt Darren singing the soundtrack



we
think
code_

Meet your corporate
sponsors

POWERED BY





Tony, Mike, Rory and Gery from ATC joined Thabang and I for the recent WeThinkCode Corporate Fair, which gave the WeThinkCode students the opportunity to interact with corporate sponsors such as BBD.

Students were curious about BBD's culture, current and future projects being worked on, who our main clients are and what sets BBD apart from the rest.

We drew the students to BBD's table by using a Robocode challenge that we had set up to run on 25 minute segments, allowing students to compete against one another. The idea behind it was to test the students' abilities to code, think on their feet and appeal to their competitive natures. The top five were awarded prizes and spot prizes were awarded every hour, ensuring we had an enthusiastic group at our table.

It was encouraging to see WeThinkCode students walking around in their BBD hoodies, which we'd given to them earlier in the year. Overall it was a successful event and a great initiative from the WeThinkCode team offering their students the opportunity to engage with sponsors.

Christopher McCully
BBD HR TEAM

BBD BRINGS THE GAUTRAIN TO YOUR DOORSTEP



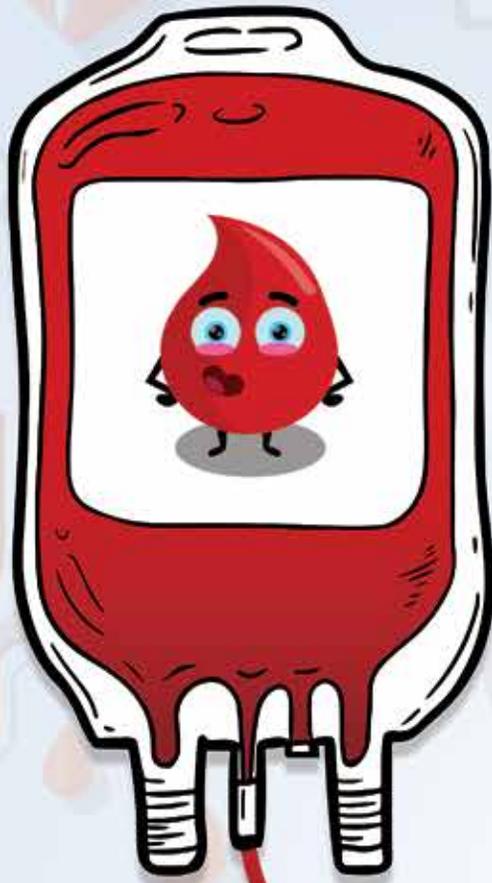
Catching the Gautrain to Rosebank and worried how you will get to work?

No problem! A shuttle service will deliver you to the **BBD Johannesburg offices.**

Monday to Friday

Oxford Road, Rosebank Gautrain station: 07h10 and 08h10
BBD, Killarney: 16h15 and 17h15

**1 pint of blood
can save up to
3 lives**



 **BBD DONATION STATS**

Thank you to all BBD people who donated blood in 2017: we collected 139 pints from both Pretoria and Johannesburg – saving 417 lives and surpassing our 100 pints goal!



Scan here to view
SABS blood stock levels



**BBD
GROUP**



BBD's core business is bespoke software development, consulting, integration and system support and maintenance. We are South Africa's leading provider of these services, with the longest track record and the largest skills base.



BBD India complements BBD South Africa's core business by attracting the most talented individuals that Pune, one of India's top university cities has to offer. As Pune is a growing IT hub, BBD India is also able to access specialist skills that are scarce in South Africa.



Fusion Software is a powerful, innovative and integrated software solutions and business management tools provider. With solutions built by real people for real people, to deliver value and true assistance to customers. Their modern business management software incorporates software and web solutions, app and custom development and integration.



Innosys, a subsidiary company of BBD, is a specialist in the development of custom software systems for the South African, UK and European insurance industries. Innosys has extensive insurance knowledge and experience in the development, implementation and post-implementation support of systems across a range of short term, life, commercial and specialist niche insurance domains.

BBD GROUP STRUCTURE



BBD Management // 49%

Sphere Investments // 49.9%
Broad Based Educational Trust // 1.1%



BBD // 100%



BBD // 26%

Fusion Software Management // 74%



BBD // 73%

InnoSys Management // 27%



JOIN THE LEAGUE!



Scan QR code to join the legends

For anyone who doesn't know what League of Legends is or what it's about, we'll start simple.

League of Legends is a free-to-play, multiplayer online battle arena (MOB). In its most common form, it's a 5v5 showdown where you choose your champion from those available and battle it out. The first team to destroy the opposing team base (or gets the opposing team to surrender), is declared victorious.

The map consists of top, mid and bottom lanes. Between these is the jungle with various camps and objectives that can be taken. Each lane has three turrets that need to be destroyed, to push your minion waves towards the base. Once there, inhibitors need to be destroyed to get to the two turrets protecting the nexus, which is the end goal to win the match.

Teams consists of a top and mid laner, who both take a lane to push on their own. A jungler manoeuvres around the map, assisting struggling lanes and securing objectives, to provide buffs for the team. Both lanes comprise an attack damage carry (ADC) and support, who keeps the ADC safe while helping to secure kills and tip the balance in team fights. Each champion has a unique set of abilities and when combined with the items you acquire in the game, makes for interesting implementation of strategy and teamwork.

It takes a lot of cues from the original Defence of the Ancients (DotA) mod for Warcraft III; while adding its own diverse champions, backstories and world lore. League is a team sport. You win and lose as a team. The payoff from emerging on top is 100% worth the frustration ... or maybe 90%. Go check it out for yourself.

Antoinette Henn
BBD ACTURIS TEAM



Chef SEAN



How did the lolly pop cross the road?
It was stuck to a chicken!



Chicken

An average plate of cooked chicken that weighs about 113 grams, contains 337 calories. When fried, the calories almost double. 100 grams of chicken will provide a person with about 30 different nutritional substances.

Sour cream

Sour cream was accidentally discovered a few centuries ago, when milk turned sour. It is high in minerals such as phosphorus and calcium and can be added to soups, baked goods, pastries and fillings, roasts, stews, creams and jellies.



Chilli



1 fresh medium sized chilli contains the equivalent vitamin c of 6 oranges. Hot chilli peppers burn calories by speeding up the body's metabolism by triggering a thermodynamic burn in the body.

SOUR CREAM CHICKEN CHILLI

Ingredients

- > 1 onion
- > 4-6 green chillies
- > 4 large chicken fillets
- > 1 tin butter beans
- > 1 tin sweetcorn kernels
- > 2 x chicken stock pots
- > 1 packet béchamel (white) sauce
- > 3 tbsp extra virgin olive oil
- > sour cream
- > salt and pepper to taste

PREPARATION TIME

Approx. 30 mins

COOKING TIME

1.5 hrs

SERVES

6-8

Method

1. Dice the onion and chillies, toss into a large pot with olive oil on medium-high heat.
2. Cut the chicken pieces into short strips approximately 1cm thick. After the onion starts to sweat, add the chicken to the pot along with the sweetcorn, a sprinkle of salt and pepper and mix thoroughly.
3. Mix the béchamel sauce and stock in separate measuring jugs. Reduce heat slightly.
4. Pour the stock into the pot while slowly stirring. Cool on low for 5 minutes, then add the béchamel sauce and beans and stir through.
5. Place a lid 3/4 on the pot and set a timer for 35 minutes. After the time is up, add a sprinkle of salt and pepper, stir the pot ensuring nothing is sticking and set the timer for a further 35 minutes.
6. Serve hot in a bowl along with a dollop of sour cream, chillies, grated cheese and crisp Italian bread!



Tear here to add
this recipe to
your collection

bdd information station

Email Aliases

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indiapayroll@bdd.co.za // For all your salary and reimbursement related queries

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Public Holidays

BBD South Africa

BBD India

2017

16 Dec Day of Reconciliation
25 Dec Christmas Day
26 Dec Day of Goodwill

25 Dec Christmas Day

2018

01 Jan New Year's Day
21 Mar Human Rights Day
30 Mar Good Friday
02 Apr Family Day
27 Apr Freedom Day
01 May Workers Day
16 Jun Youth Day
09 Aug National Women's Day
24 Sep Heritage Day
16 Dec Day of Reconciliation
17 Dec Public Holiday
25 Dec Christmas Day
26 Dec Day of Goodwill

26 Jan Republic Day
02 Mar Holi
01 May Labour day
15 Aug Independence day
13 Sep Ganesh Chaturthi
02 Oct Gandhi Jayanti
19 Oct Dussehra
07 Nov Diwali
08 Nov Diwali
25 Dec Christmas

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COCKY CORNER

ANAGRAM

See how many words you can make out of the word **technology**.

We can think of at least 10!

Enjoy



AUGUST BEZU BALLZ WINNER



SPOT THE 10 DIFFERENCES



GET REAL

- If you are waiting for the waiter, aren't you the waiter?
 - Why is it called a building when it's already built?
 - Do you think sand is called sand because it's between sea and land?
 - Who knew what time it was when the first clock was made?
 - If two vegans are arguing, is it still considered beef?
 - Why does our nose run, but our feet smell?
 - Is the S or the C silent in scent?
- What does water taste like?

WORD SEARCH

U	Q	Z	H	D	E	V	E	L	O	P	M	E	N	T
N	O	B	D	H	Q	P	L	K	I	H	I	A	O	J
K	U	P	E	S	Y	M	K	U	K	K	N	D	E	K
Z	H	F	K	S	U	N	D	L	F	N	T	H	Q	W
P	R	G	Q	P	P	C	G	J	P	S	E	R	A	N
K	I	L	Z	V	D	O	C	F	W	A	G	T	L	C
A	T	H	U	Z	C	V	K	E	E	D	R	C	N	W
G	I	S	T	R	E	P	X	E	S	P	A	G	B	Z
L	O	X	U	H	D	Q	H	L	Z	S	T	A	I	Q
V	C	B	B	M	B	F	J	S	G	B	I	Y	T	V
C	O	L	L	A	B	O	R	A	T	I	O	N	T	T
W	W	K	T	G	P	X	D	Z	C	Q	N	W	C	Y
X	W	C	S	X	A	N	K	X	B	P	J	O	V	T
L	M	C	Z	V	G	S	O	F	T	W	A	R	E	F
B	B	D	J	Y	G	O	L	O	N	H	C	E	T	O

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