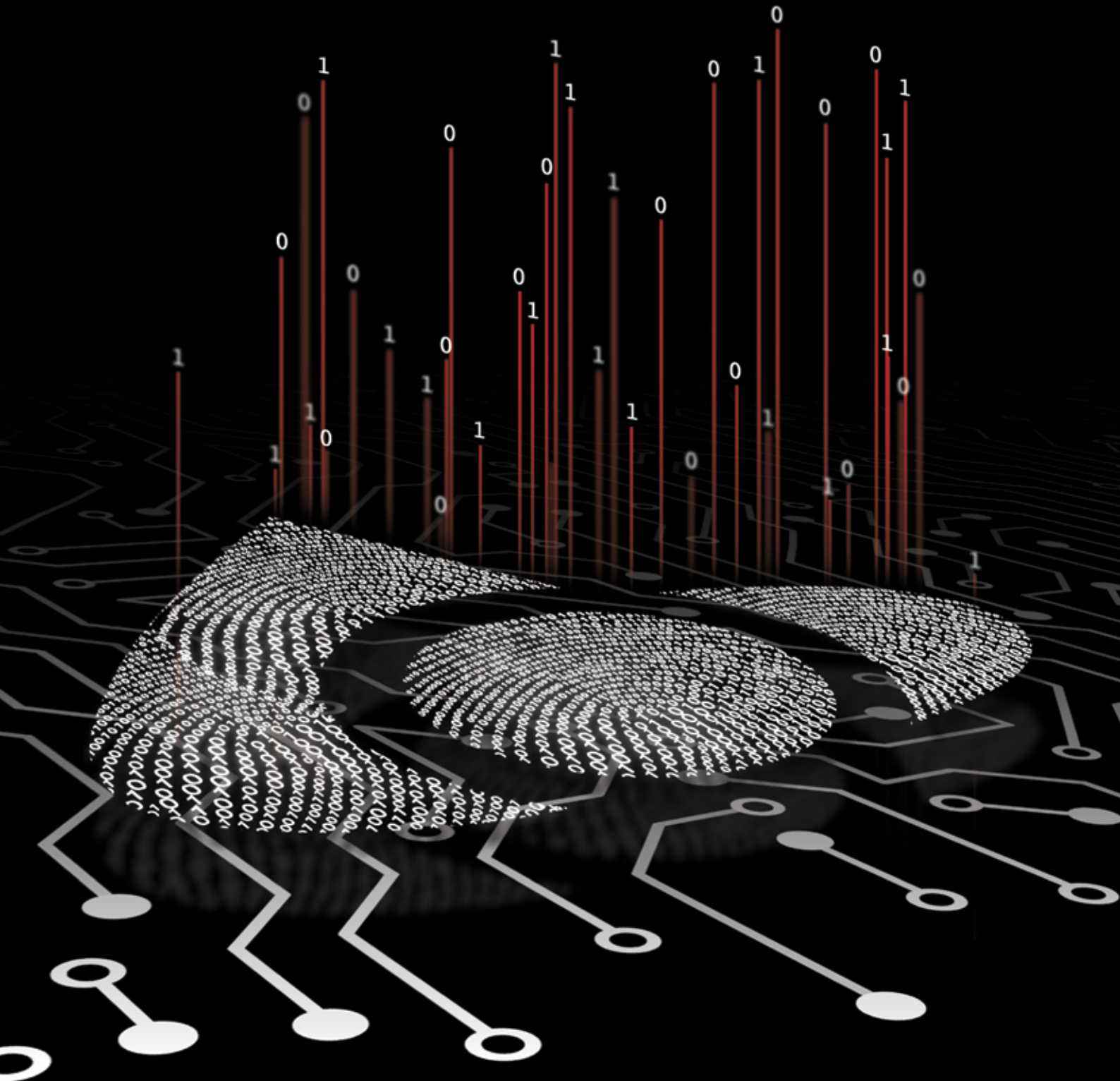


b b d bulletin

AUGUST EDITION 2019



› BBD CELEBRATES 35 YEARS

› GROWING GLOBAL HORIZONS

› DISRUPTORS

› WOMEN IN TECH

› BBD BRAG SHEET

› IS YOUR DIGITAL TWIN AN
ARSEHOLE?



8. Growing global horizons

As the world becomes smaller and the technology playing field evens out, the ICT skills and experience we have in South Africa are increasingly recognised as equally relevant around the globe.



14. BBD Benefits

We've cultivated our culture over the last 35 years and are proud to be a company that you can be proud working for. Here are some of the game-changing perks to working for BBD.



18. BBD Bragsheet

With countless lines of code written and complex problems solved, innovation is our lifeblood. Having grown into a global company, here's a look at some of the amazing things we've achieved.

- 4. Information Station
- 6. Note from the Ed
- 8. Growing global horizons
- 10. Group structure
- 14. BBD Benefits
- 17. A spherical challenge
- 18. BBD Brag sheet
- 21. AWS summit
- 22. BBD Mid-Year update
- 24. Bundu Bashing in Bella-Bella
- 26. Women in tech - Africa conference
- 28. MSDF teambuild
- 30. BBD Award Nominations
- 36. Thriving on the edge
- 38. The microservice metamorphosis
- 40. BBD @ devconf 2019

CONT



44. Is your digital twin an arsehole?

As with any new and fast-growing technology, companies should be wary of the possible implications that might arise from adopting it without doing proper research. Don't let this be you.



46. BBD celebrates 35 years

The year is 1984, Apple Computer Inc. just unveiled their first ever Macintosh, Prince released his hit album "Purple Rain" and Barone, Budge and Dominick came together to form something amazing, BBD.



22. Mid-Year update

Continuous learning was the theme for this year's Johannesburg, Cape Town and India events, with Peter and ATC sharing the stage to highlight the importance of owning your career development within our fast-paced industry.



26. Women in tech - Africa conference

This innovative conference has been running for three years and enables people to connect, learn and take action on gender diversity and inclusion in the world's fastest growing industry.

TENTS

- 42. A culinary masterclass
- 44. Is your digital twin an arsehole?
- 46. BBD celebrates 35 years
- 62. Be your own learning hero
- 66. What's all this Flutter about?
- 70. Disruptors
- 72. Doubles pool tournament
- 74. On track
- 76. 5 Steps to make your business cloud agnostic
- 78. Gery goes gallivanting
- 80. Sprout up this spring
- 82. Game on: Spyro - Reignited trilogy
- 83. Game on: Steep
- 84. Recipe - mushroom stroganoff
- 86. Cocky corner



62. Be your own learning hero

Learn your way through the Adventures, Level Up your skill, and defeat the Side Quests to earn points, evolve your avatar, outscore your colleagues and ultimately stay at the very top of your career development game.



76. 5 Steps to make your business cloud agnostic

Cloud lock-in is a growing concern for businesses who have invested copious amounts of time and resources transitioning their new or legacy systems to the cloud.



84. Recipe - mushroom stroganoff

Quick and easy, this vegetarian dish is hearty, savoury and delicious. Serve over egg noodles, traditional pasta, quinoa, veggies, or whatever sounds delicious to you.



Note
from the Ed



“35 never looked so good”

With the world finally coming to grips with England's nail-biting Super Over victory in the Cricket World Cup and Elon Musk releasing his brain hacking tech, it's safe to say that 2019 has been the year of revolutionary movements.

With the ball in BBD's court, we have also made some big plays.

Firstly, we turn 35 in September. Which means 35 years of delivering world-class solutions to all corners of the globe which we couldn't have done without you. It also means 35 years of some of the best memories, laughs, hairdos and hair-losses. Take a trip down memory lane on page 46 and be sure to tweet us your favourite pic!

Our teams are also growing rapidly, and with the official launch of The Hero's Journey (page 63), we are able to pull the crème de la crème analysts and software engineers from around the world to meet our near-shore and co-shoring project requirements.

A key focus for us has been our push for cloud solutions. Be sure to get the low-down on page 76 on how you can avoid cloud lock-in and start taking advantage of being cloud agnostic. But we didn't stop there, turns out digital twins can be serious arseholes - check it out on page 44.

Lastly, we have crammed all the goodness, gossip and ground-breaking info into the next 81 pages and really hope you enjoy reading it. If you have the inside scoop that would make a great article, or have an ingenious idea the world should hear, please send us a mail at marketing@bbd.co.za

See ya next time!

Blake Roberts
BBD MARKETING TEAM





GROWING GLOBAL HORIZONS

As the world becomes smaller and the technology playing field evens out, the ICT skills and experience we have in South Africa are increasingly recognised as equally relevant around the globe. Our response to these advances is to expand our geographical footprint and **enhance our presence as a global software development organisation**.

The India office has been very successful in helping us support our local South African teams, Innosys leverages their Bulgaria office for similar reasons, and the work we do out of South Africa for one of our UK clients has enabled them to use our highly skilled development teams to build world-class software systems that are used across the UK, Europe and further afield.

As part of our ongoing drive to entrench our global footprint, we are committed to **cultivating BBD in European markets** while using all of our locations to deliver innovative solutions and work directly with existing and new clients in the UK and across Europe.

As a highly competitive market, **winning business across Europe** is not easy. We are utilising our networks to win projects and forge our future in these geographies. Some of these opportunities are already in progress, others in the pipeline.

But we don't just have our sights set on Europe. International companies see South Africa as the doorstep to the rest of Africa. As such, we are committed to **gaining experience in the larger African market** and are working in conjunction with our client base to leverage local partnerships in these countries. Most recently, we participated in a request for information for the Ministry of Finance in Ghana.

Interestingly, **Africa is also increasingly seen as having very good technology skills and innovators** as seen in Kenya, Zimbabwe and Nigeria, where innovative FinTechs are finding tailored solutions that work for Africa. Part of our strategy is to encourage this homegrown approach as we do with the various initiatives we've been involved in for the past 18 months.

We are **enhancing and diversifying our own technical capabilities** in relevant technologies and platforms including cloud-based expertise in AWS, Google and Azure. This will not only give our teams a chance to gain international project experience but enables our drive to act as the software development conduit between companies in this global market. To achieve this, we need to excel at running international projects with distributed, culturally diverse teams. As South Africans, this is something we're very familiar with.

Together with the reality of immigration, we see all of this an opportunity to **further develop BBD and the incredible people we have** working across our connected workforce. It's why we're so excited to forge our brand identity globally, and allowing for alumni, current staff and new hires to grow into these new territories with us.



Matthew Barnard
BBD UK DIRECTOR



BBD GROUP STRUCTURE



BBD is Africa's leading provider of custom software development, system support and maintenance, with the longest track record and largest skills base. BBD's ability to deliver sustainable solutions sets it apart from its peers.



Fusion Software, a BBD partner, 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.



Ilion links data and financial performance to deliver solutions that optimise business operations. Their services include financial risk-based analysis, data management and advanced data analytics – all provided by a team of skilled consultants. Ilion is technology neutral and works alongside their clients to seek the best solutions for their needs



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.



Xpertek Contact enables retailers to leverage the power of digital solutions and the portability of mobile devices through location-based marketing capabilities, enhancing any size company's internal operations using robotic process automation. Partnering with leading technology companies and recognised leaders has equipped Xpertek Contact to serve and support medium to large South African corporates.



Sphere Investments // 49.9%
Student Sponsorship Programme // 1.1%

BBD Management // 49%



Fusion Software Management // 74%

BBD // 26%



Ilion Management // 49%

BBD // 51%



Innosys Management // 27%

BBD // 73%



Xpertek Management // 70%

BBD // 30%



PREMIER VERIFICATION

B-BBEE Verification Certificate

Issued to:

Barone, Budge & Dominick (Pty) Ltd

1 Newtown Avenue, Killarney, Johannesburg, 2193

Company Registration: 1984/007889/07

VAT: 4070111713

LEVEL TWO (2) CONTRIBUTOR

B-BBEE RECOGNITION LEVEL- 125 %

Generic Scorecard -

Amended Information and Communication Technology Sector Code (Section 9(1): 40407)

Criteria	Result	Weight
Ownership	25.00	25.00
Management Control	11.99	23.00
Skills Development	14.58	20.00
Enterprise & Supplier Development	54.10	50.00
Socio-Economic Development	12.00	12.00
Overall Result	117.67	130.00
Priority Elements Achieved	Yes	
Empowering Supplier	Yes	
Nature of Business	Software Development	
Certificate Number	PV_1906013	

Element	Result
Black Ownership	50.29%
Black Female Ownership	15.19%
Designated Group Supplier	No
Modified Flow Through Applied	Yes
Exclusion Principle Applied	No
Measurement Period	28 February 2019
Re-Issue Date	Not Applicable
Issue Date	28 June 2019
Expiry Date	27 June 2020
Version Number	C01


Matthew Kearns
Premier Verification (Pty) Ltd


888EE Verification Agency

BVA100

Tel: 010 591 0591

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Postnet Suite 334, Private Bag X11, Craighall, 2024

1st Floor, Platinum House, 24 Sturdee Avenue, Rosebank

www.premierverification.com



As a level 2 contributor, BBD shows an on-going commitment to all the different aspects of B-BBEE. The pillars that are used for measurement of a business in the ICT sector are designed to require a B-BBEE focus on ownership, management, procurement, employment, training, business development and social initiatives.

A recent change in the ICT Sector B-BBEE codes has meant that social initiatives are now focused on helping South Africans cross the digital divide. BBD's level 2 score, along with being recognised as a value adding enterprise, means that BBD clients can claim 125% of every rand spent with BBD as B-BBEE spend.

BBD BENEFITS

all the perks you need!





Café and coffee stations

- Fully stocked vending machines with free snacks
- Breakfast cereals
- Cheap and delicious chow
- Fresh fruit and bread daily
- Unlimited BBD branded still and sparkling water
- Monthly Friday lunches
- All the microwaves, cutlery, crockery and condiments you could need
- Endless coffee – Tanzanian Mbeya, Burundi and Ethiopian beans
- BIBO water dispensers for instant hot, tepid and cold water
- Payday chocolates
- Steri Stumpie day



Best for the best

- Salary reviews
- BBD facilitated medical aid gap cover option
- Retirement annuity option
- Group life, disability and dread disease cover
- Trauma counselling
- Financial advisor
- Bond and vehicle finance originators
- Bonuses for exceptional performance
- 3G reimbursement – project specific
- Standby allowance – project specific
- Flexi working hours – project specific
- Had a baby? You get a hamper
- Tied the knot? You get moola
- Staff recognition through monthly award nominations. The prizes include Duvet leave, Nintendo Switches, advanced driving courses, Tiger Wheel & Tyre gift vouchers, stocked wine fridges AND the winner gets to donate R1 000 to a charity of their choice. Winners are announced at the annual Bierfest where nominees have the opportunity to win loads of cash (like R150 000!)



Work environment

- High-tech technology
- Breakaway and private phone rooms
- Secure parking
- State of the art laptops
- Safe working environment
- Chilled atmosphere
- Encouraged creativity and collaboration
- Gautrain shuttle to and from Rosebank station
- Comfy couches and chill zones



Healthy habits

- Vitality Health assessments
- Free flu vacs and vitamin B injections
- 5 blood drives per year
- Annual wellness days include various health sessions ranging from reflexology and manicures to massages, stress

management, live blood analysis, biokineticists and chiropractors. There are also games, photo booths and so much more! We even give away awesome spot prizes like Fitbits and wireless earphones.





Events

- Trailblazing annual tech event – esc@pe
- Kickass year-end functions with great entertainment, delicious food and taxi services to get you home safely
- Mid-year update party to keep you in the loop
- Annual Bierfest sees teams brewing their own craft beer
- Industry meetups
- Team lunches
- Unique team building events



Upskill like a boss

- Internal Continuous Learning Programme (CLP)
- External and online training
- Onsite / VC training with SA's top IT specialists
- Mentoring
- Certifications
- Ability to attend key technical events
- Financial aid to assist with further studies
- Bursary, learnership and graduate programmes
- Enterprise development for young up and coming IT professionals
- Career development
- Socio-economic development



Fort kickass

- Games room with arcade machines, table tennis, darts, pool table and giant Jenga
- Putting greens
- Jukebox
- Competitions with awesome prizes
- Bar
- Board games
- 42" TV screens and projectors



Sport vibes

- Sponsored uniforms for all sports teams
- Action cricket
- Cycling
- Netball
- Soccer
- Fitness groups



A SPHERICAL CHALLENGE

In true BBD fashion, we put this year's winter vac bursary students to the test with a team Sphero challenge... and wow did they impress!

Using teamwork and skill, the bright-eyed students had a week to solve the problem of how to guide a Sphero ball around a map, plotting the route locations as it went. They were given proximity sensors and a webcam and had to make use of only a Google Maps API and JavaScript or Python to make it all happen. The students were divided into four groups, each with a specific task which the other teams were dependant on to get their task complete.

With collaboration and problem solving ruling the week, and more than a few memes wooing the crowd on presentation day, the students showed us their mettle for sure!



BRAG SHEET



GIFTED PROFESSIONALS BY DAY

- › Over 700 highly talented technology experts
- › BBD employs a Google Developer Expert in Web Technologies, one of only a handful across Africa
- › Our R&D team are super geeks, do ridiculously clever things and includes an astrophysicist
- › The R&D team facilitates continuous and varied learning to keep our teams on top of their game
- › Our staff are highly skilled with some having two masters' qualifications; we even have a resident Dr of Computer Science
- › We partnered with Vodacom to develop the My Vodacom App, which won Best Mobile App in Africa at the Digital Impact Awards Africa

NOT JUST A PLACE TO WORK - A PLACE TO GROW

- › Offices around the world
- › Our staff visit our other BBD offices, both for work and cultural exchanges
- › Esc@pe, our annual internal tech event, allows staff to share and discuss key trends alongside leading industry speakers
- › Internal gamified Continuous Learning Programme that supports our sustainable culture of learning
- › The Hive is an onsite tech lab where staff can play to learn and even do a 3D print (or two)
- › We have ranked 1st in the My Broadband's Salary Survey for the IT sector
- › For years running, we have received a Platinum Seal of Achievement in the Deloitte's Best Company Survey

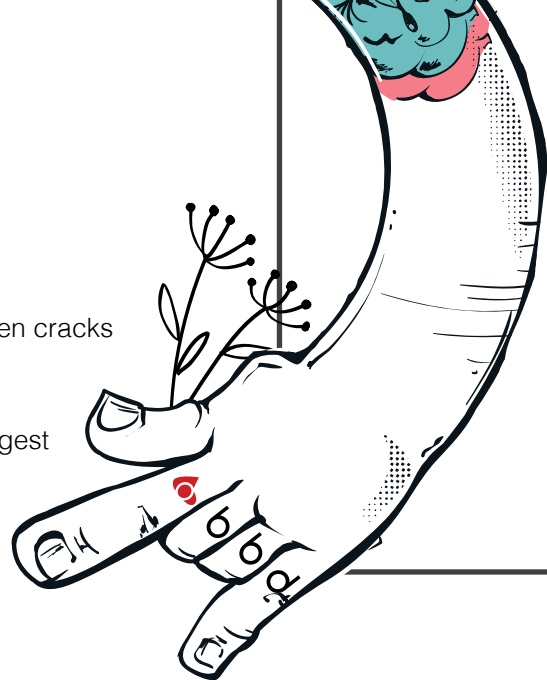
HEAD IN THE CLOUD

- › Microsoft Azure Gold Certified Partner
- › AWS Standard Consulting Partner and a CloudFront Global Content Delivery Network Partner
- › Our skills base includes Certified Solutions Architect Professionals
- › We employ one of the first AWS Certified Advanced Networking Specialists in South Africa



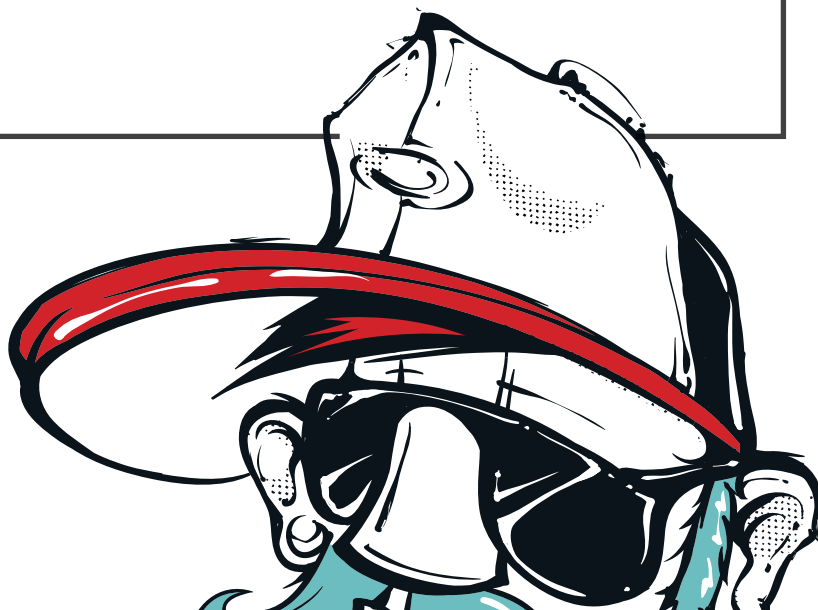
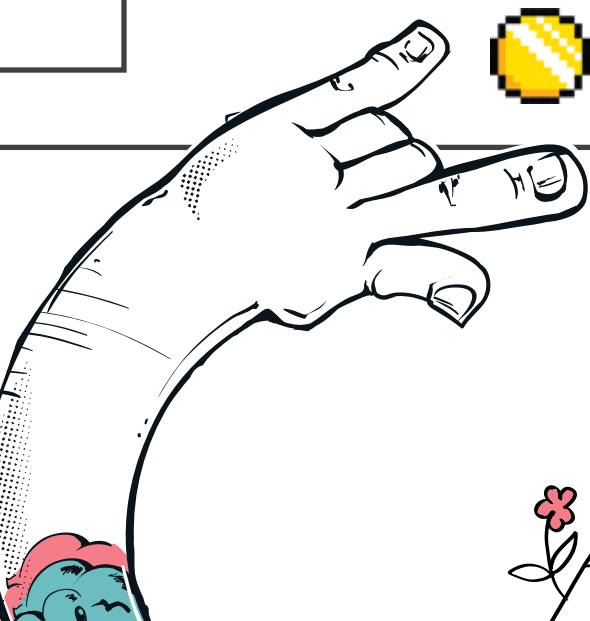
FIND US IN THE TECH PLAYGROUND

- › BBD frequently attends and sponsors leading industry summits and often cracks the nod to present
- › You can always find our talented speakers attending DevConf, SA's biggest software development conference
- › Official t-shirt sponsor at the very first DevFest
- › A BBD person was lucky enough to be chosen to attend the Google I/O in California, not once but twice!



EMPOWERING AN INDUSTRY

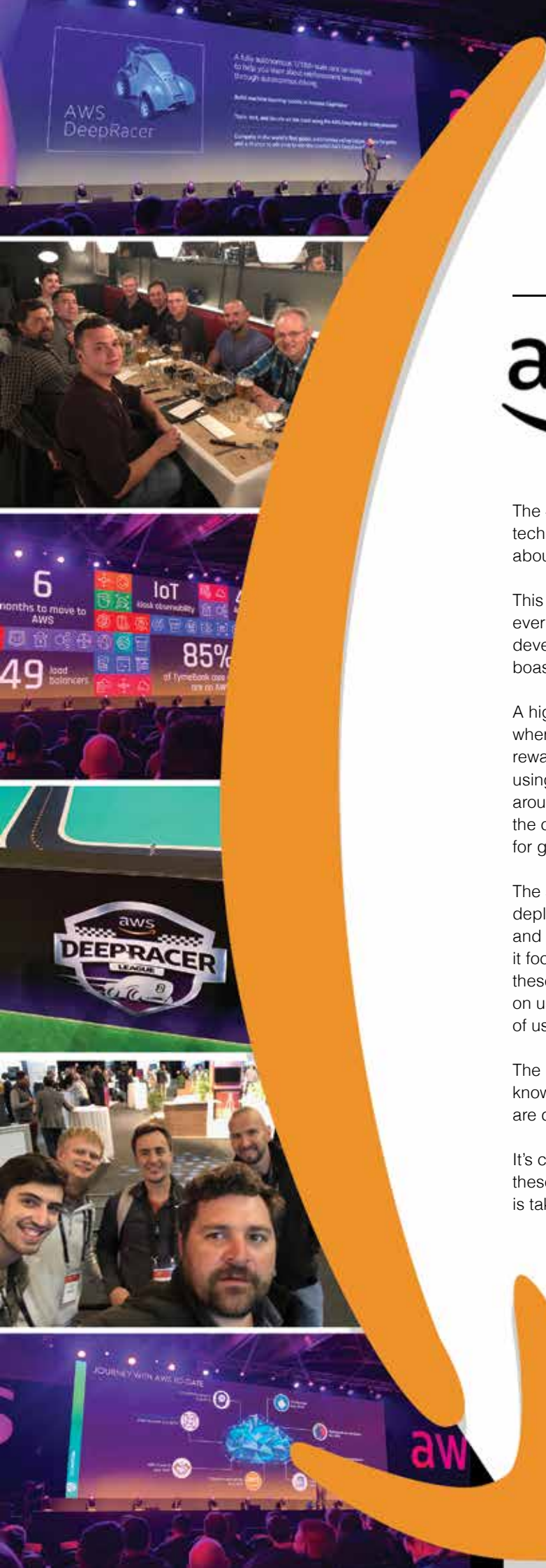
- › BBD is a level 2 B-BBEE rated company, proving our commitment to improving ICT skills and changing lives through job creation
- › Founding partner of WeThinkCode_ (WTC), a tech-based learning institution that offers free software development education
- › We get the top 20+ WTC students annually
- › A WTC grad who works for BBD won FutureHack and attended the F8 Facebook Developer Conference in San Francisco
- › We strongly believe in encouraging women in technology and have founded a programme with Umuzi to empower young, talented female coders
- › As a GirlCode sponsor we support and host hackathons and workshops
- › We are heavily involved in the SA ICT community and regularly host MoJo, Jozi-JUG, AWS-JOZI, Docker-Johannesburg and Jozi.JS



A *splish* and a *splash*
to make your car *smile in a flash*



BBD offers **free eco washes to employees** every week
because we know how much you love your car



THE 2019

aws SUMMIT CAPE TOWN

The 4th annual AWS Summit Cape Town brought African technologists together to connect, collaborate and learn all about what Amazon Web Services offers.

This one-day conference saw breakout sessions covering everything from networking, threat detection and operations to development, architecture and new services. The conference boasted 8 parallel breakout tracks for the 3,500 attendees.

A highlight of the day was the AWS DeepRacer competition where, after attending a workshop, attendees could write a reward function that teaches a robotic race car how to drive using reinforcement learning. The aim was to get the car around the racetrack as quickly as possible, sticking to either the centre or outline. With a trip to AWS re:Invent in Vegas up for grabs, competition was fierce!

The serverless session with tips and tricks for serverless deployment, cross-optimisation, configuration management and best practices for lambdas was especially interesting as it focussed on the caveats that are important to remember in these environments. Another very good session was the how to on using image analysis and drones, explained in the context of using the technology to combat poaching.

The BBD representatives who attended soaked up the knowledge on offer and enjoyed the exposure to what others are doing in AWS.

It's clear from the high level of C-Suit interest in events such as these, that cloud is becoming ubiquitous and business at large is taking cloud seriously.

Katie Cubitt

BBD MARKETING TEAM

A close-up, high-contrast photograph of a person's face, likely a woman, with dramatic black and gold makeup. The face is the central focus, with the right side of the image being mostly black. The left side features intricate gold and black patterns, including a large, stylized eye graphic. The person's lips are painted black, and their hair is also black. The overall aesthetic is bold and artistic.

MID- YEAR

update

Continuous learning was the theme for this year's Johannesburg, Cape Town and India events, with Peter and ATC sharing the stage to highlight the importance of owning your career development within our fast-paced industry.

Peter got the afternoons going with an overview of each Group Company and how we can work together to provide complimentary solutions for clients, followed by a deeper look into how BBD tracked this past financial year alongside our drive to harness the opportunities at hand to grow our connected workforce and expand into new global territories including in the UK, Europe and throughout Africa.

Tony and the rest of ATC, BBD's research and development team, then introduced The Hero's Journey, a gamified Continuous Learning Programme in support of our vision to create an inclusive and sustainable culture of learning at BBD.

Ventriloquist Conrad Koch had the crowd in hysterics with his no holds barred act – the perfect segue into an evening of colleague comradery.



BUNDU BASHING

IN BELA-BELA

"With the real work behind us,
we renamed the actual event
our **teambuilding after-party.**"



We can hardly believe that a whole year has passed since our last teambuilding. Our teambuilding events have always tended to be legendary experiences, and this year was certainly one for the books.

The two weeks leading up to the day were filled to capacity with a number of project challenges; all requiring long hours and a lot of team effort to complete on time. In a sense, this was something of a teambuilding exercise in itself. With the real work behind us, we dubbed the actual event our teambuilding after-party.

Early one Friday morning, we gathered at BBD's Pretoria office and boarded a bus to take us through to the beautiful Sondela Nature Reserve near Bela-Bela, Limpopo. En route, we stopped at Piccinini's Bistro & Pub where we were treated to a scrumptious breakfast buffet.

For our first adventure at the nature reserve, we sat in the middle of a 4x4 obstacle course, surrounded by three VW Amaroks – ready and waiting for us to take them around the course. Some of us really enjoyed the thrill of the brakeless incline (these vehicles did all the real work for us, so we could just sit tight and enjoy the ride), while others hopped onto quad bikes for a dusty but fun experience out in the African bush. For all of us, this experience was one of the highlights of the weekend.

By late afternoon, exhilarated from our respective obstacle course and quad biking adventures, we headed back to the camp to relax for a little while before meeting up for a tractor-led game drive. As a private nature reserve, there are no dangerous wildlife roaming the property, so it was wonderful to be allowed to get out of the vehicles and just enjoy the expansive views and quiet of the bush.

The following morning, we were treated to a tour of the reserve's wildlife centre where rescued animals are housed and cared for. It's one thing to see a wild animal at a distance out in nature, but to stand just a few metres away from two magnificent pumas is an incredibly memorable, and something that for many of us, may very well be a once in a lifetime experience.

This short weekend getaway was unforgettable. After such a fantastic time away from it all, we can't help but wonder what adventures are in store for us next year.

Thilo Muller
BBD DHA TEAM





This ground-breaking conference has been running for three years and enables people and organisations to connect, learn and take action on gender diversity and inclusion in the world's fastest growing industry.

Woman in tech

Africa conference

IT is generally a male-dominated field, a characteristic that's not entirely unique to South Africa. It's usually men who are directed towards STEM studies and careers, while women are more inclined towards admin-dominated roles.

Conferences like Women in Tech aim to change such stereotypes by creating a space for women to network with like-minded individuals within the IT field. These networking opportunities provide guidance and support in navigating this testosterone-filled environment.

The Women in Tech Africa conference is part of the bigger Women in Tech World Series which hosts conferences in various cities around the world, such as London, Amsterdam and California. This ground-breaking conference has been running for three years and enables people and organisations to connect, learn and take action on gender diversity challenges, as well as encourage more inclusive practices in the world's fastest growing industry.

The Women in Tech conference, however, made its way to the African continent for the first time this year. Hosted in Cape Town, the conference was presented and attended by over 700 technology professionals from all over the world.

During the 2-day conference, more than 70 thought and industry leaders from some of the top companies in the world such as Dell, Google, Facebook, AWS and Microsoft shared their thoughts and opinions on the current state and future of IT. These leaders also shared the lessons they learned during their own journey to greatness.

The main theme of the conference was 'Master the Art of Disruption', which was highlighted during various inspirational keynote presentations, talks and workshops. Topic sessions included:

- **Game-changers in diversity and inclusion** - experienced cross-industry thought-leaders offered practical tools and strategies for how to tackle stereotypes, as well as create or enhance true diversity and inclusion in order to achieve the ultimate competitive advantage
- **The future of Africa is tech** - this topical session addressed how disruptive technology can create opportunities in business which aid in capitalising the proven applications of social platforms, as well as the implementation of intelligent uses of data, cloud computing and blockchain
- **The future of work** - sustaining Africa's next gen talent – looking at Africa as one of the fastest-growing and 'work-ready' populations in the world, this session focussed on how companies can build a sustainable pipeline of talent that matches major growth areas in the technology sector
- **Technical learning labs** - these hands-on workshops aimed to upskill technical experts. They looked at the top emerging languages for 2019 such as C++, PHP, Python, Java, HTML and more, while also touching on how to leverage DevOps, APIs and microservices
- **Soft skills learning labs** - these hands-on workshops and seminars focussed on the essential soft skills needed to reach the next level, both in an individual and professional capacity

Many women find that it can sometimes be isolating in this industry and we found ourselves comforted when more than one speaker shared how they landed in the IT sector almost by mistake – a start shared by other females.

One of the biggest talking points throughout the conference was gender diversity in the industry and how it is necessary for all stakeholders to actively work towards gender inclusion and parity.

Multiple speakers raised the importance of mentorship, where experienced women share their stories and offer guidance for navigating through what can sometimes be an intimidating sector.

An important take-away was a reminder for women to acknowledge that they are more than just their careers. As people, we all have to ensure that our emotional, mental, spiritual and physical needs are met in order for us all to perform at our best.

We left the conference feeling inspired and motivated, knowing that even though we may be a minority in the IT space, women can still play an important role in meeting the needs of society through information technology.

Patricia Fakudze and Lerato Masekwameng

BBD STDB TEAM



MSDF Teambuild

A toast to on-target
teambuilding



As we all well know, a little bonding between teammates from time to time goes a long way in building a productive unit. We strategically set our teambuilding for the 4th April, when our spirits would be high and the pressure at its lowest.

We flew in our Capetonian teammates and congregated at Amanzingwe Lodge & Conference Centre in Hartbeespoort. After a steaming hot cuppa joe, we were joined by a team from 'Rent a Teambuilding'.

Although we were scheduled to participate in some target shooting first, the 'Rent a Teambuilding' crew felt we first needed a 'warm-up bonding' session. This is how we all came to jumping through a row of hula-hoops. If any of us bumped into another teammate in the process, we had to stop and play a quick game of Ching-Chong-Cha, with the losing side having to leave the line and start all over again.

The game injected us all with a dose of energy and ensured smiles all round. Now it was time for target shooting! Our instructors gave us a quick demonstration on shooting with a bow and arrow, and after a few practice rounds, we were split into two groups. Us vs 'Rent a Teambuilding' - game on! Competing against one another was admittedly tough, because it quickly became apparent that many of us were absolute naturals.

The BBD team came out on top – just beating our competitors by the smallest point difference. For our efforts, we were awarded 'trophies' of bottles of wine and sparkling wine. Cheers to us!

After a quick lunch to refuel back at the lodge, we made our way to the nearby Incendo Distillery for a gin and macaron pairing. Each of the craft gins were amazing and the variety of macarons were absolutely delicious. The pairing was a fabulous experience!

We were treated to a tour of the distillery and a quick lesson in how all their wonderful craft gins are made from the owners. The process is quite an interesting one... Did you know that barley, the grain used for beer, is also used in pot distilled gin?

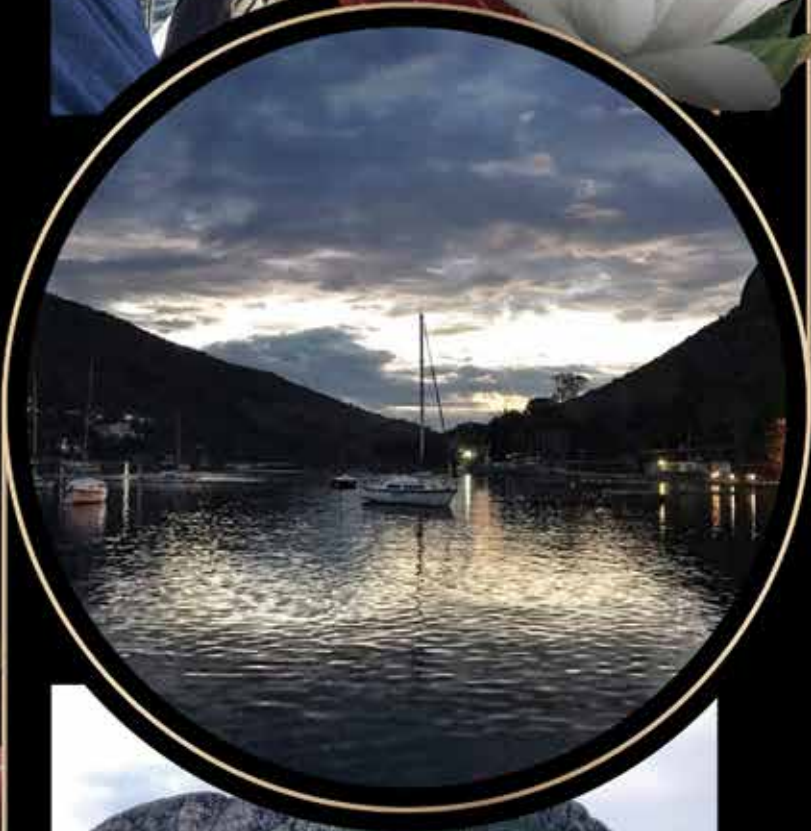
Our next destination was Hartbeespoort Dam where we boarded a catamaran for a sunset cruise. Once on board, we kicked our feet up and enjoyed the magnificent scenery around us.

To top off a fun-filled day, we headed back to Amanzingwe for a delicious dinner and a few drinks - toasting the fantastic day we'd enjoyed together.

Thank you to the team for making the day such a memorable one!

Ilana Schoeman

BBD MDSF TEAM





AWARD NOMINATIONS

HOW THIS ALL **WORKS**

Our revitalised Awards Nominations **recognise and reward exceptional BBDers**. They're designed to praise those who **go above the call of duty** for clients and colleagues alike, and who deliver outstanding service and solutions.

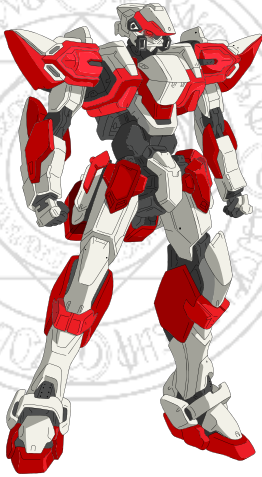
This year, nominations are accepted for anybody, including yourself, for whichever category.

The nominations run from February to October. The two monthly winners are selected by Peter Searle and get to **"PICK A PRIZE"**. The awesome prize collection includes an option for two Duvet Days for those times when you need to binge watch your favourite series, take a cat nap, or do whatever floats your boat. Monthly winners also get to pick a charity and **BBD donates R1000** on their behalf!

All monthly winners are entered into a final draw where three lucky people stand the chance to win a piece of the R150 000 pie!

1st R70 000 // 2nd R50 000 // 3rd R30 000

THE CATEGORIES



ULTIMATE BBD AGENT

UBA is to praise the individual who spearheads the conversion of ideas into realities, fosters the BBD philosophy at every turn with relentless ambition to promote the true essence of what BBD stands for, upholding the brand and everything we do.

GRASPS OPPORTUNITIES & WISDOM

The **GROW** category recognises the improvement and development of skills. This is someone who takes initiative to develop and improve their career through continuous learning and skill development. Grow is for the person who successfully seeks out training or on-the-job opportunities to further establish their skills.

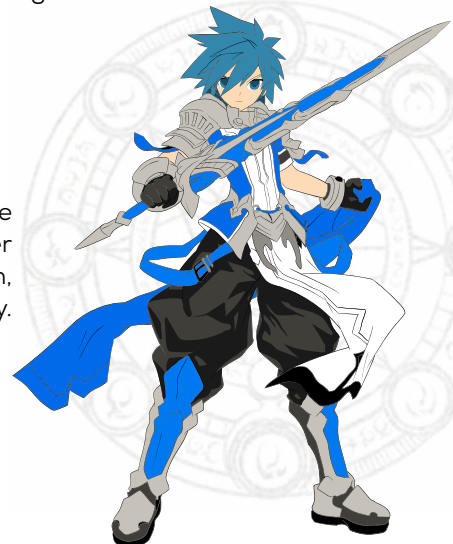


HELPING YOUR PEOPLE

HYPE recognises the person who always delivers an extraordinarily high standard of work, and is acknowledged in their team as a mentor and sharer of time, skills and knowledge.

WHATEVER IT TAKES

WIT is the category for the kingpin of perfection and reliability – the person who is driven towards ensuring client satisfaction no matter what. An almost endless source of dedication, passion and enthusiasm, this individual is a tireless champion for successful delivery.



THE SILENT OPERATOR

Quiet and dependable, the **STEALTH** award is designed to recognise someone who is not often heard, but whose positive impact is always keenly felt.

APRIL WINNERS

THEMED: OUTSIDE YOUR TEAM



WEBBER Q2000

MARRIAM MAREDI CHOSEN FOR **GROWTH**

Marriam is a diligent and dedicated BA who serves a very important role on multiple teams.

She never passes on an opportunity to improve her skills and is always looking for ways to learn and grow. Keep up the great work Marriam!

Charity of choice: Door of Hope



PEACE MAKINITA CHOSEN FOR **GROW**

Peace started as a learner a few months ago and very quickly caught up to deliver his first project within a short timeframe. He has shown immense growth and learns from any mistakes.

His determination, can-do spirit and eagerness to learn must be congratulated.

Charity of choice: ORT SA



SAMSUNG 40"
FHD SMART TV



MAY WINNERS



NINTENDO SWITCH

MATTHEW RUSSELL CHOSEN FOR **GROW**

Matthew is a talented back-end engineer who absorbs new information like a sponge. He strives to bring out the best in others and himself. Considered the team's Jedi, Matthew is well on his way to achieving great things.

Charity of choice: Animal Anti-Cruelty League



MEGAN DUNCAN CHOSEN FOR **WIT**

Megan is an extremely proficient and quality programmer who pushes her team to keep up with growing demands, scope creep and new requirements. She is not only hard working, but smart in the way she works as well. Megan is tirelessly committed to the success of her projects, even when it means implementing urgent functionality on two hours of sleep.

As a diamond in a sea of diamonds, Megan's impeccable track record, collaborative nature and dedication means she very often manages to still shine brighter.

Charity of choice: SPCA Sandton



SAMSUNG 40"
FHD SMART TV



JUNE WINNERS



MJX BUGS 5W
CAMERA DRONE

SNEIDON DUMELA CHOSEN FOR **GROWTH**

Sneidon is always learning new tech and you can always find him working on side projects to improve his skills. He is one of the most dependable, efficient and knowledgeable people you can find. Sneidon ensures that the whole team is up to date on all the new and exciting discoveries he makes, and if you ever need help, he's always there to lend a hand.

Charity of choice: Animal Anti-Cruelty League



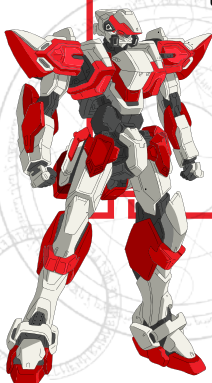
ANDRE PRINSLOO CHOSEN FOR **UBA**

Andre is a phenomenal individual who has been the "big brother" in his role as our team lead. He regularly checks in on how we're doing, despite his busy schedule. Andre plays an integral part in forming the gel that keeps the team together, communicating and relating as a single unit. He embodies BBD better than anyone and is the epitome of what an inspirational team leader should be.

Charity of choice: Animal Anti-Cruelty League



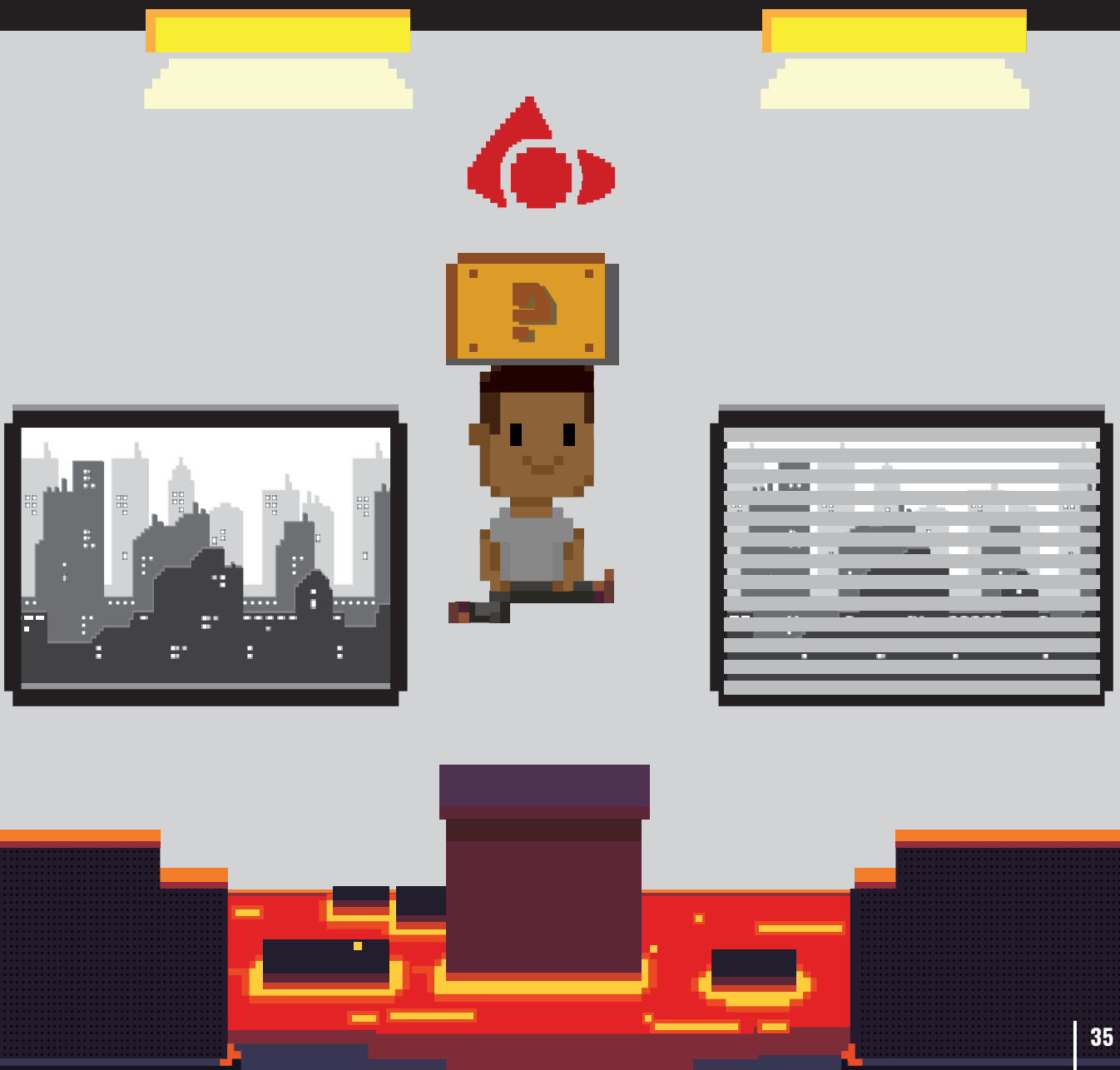
NINTENDO SWITCH





Ready to level up your career? We are hiring!

Visit www.bbd.co.za/apply if you want to work for an out-of-this-world software powerhouse!



THRIVING ON THE



A radical change in how we interact with technology is already underway and edge computing is just one integral part of it all. Cloud solutions are another.

Almost all industry sectors are salivating for quicker and smarter solutions and real-time data solutions are becoming an essential component for just about every organisation. And why not... we all stand to benefit. With a finger in almost every pie, edge technology is already thriving.

Edge essentially connects the dots and delivers what end users are looking for – a valuable business benefit. Here's a look into why edge computing and cloud services are so useful.

First things first... what is edge computing?

Driven by the internet of things (IoT), edge essentially addresses the growing need for data solutions with enhanced processing power and efficiency. Built-in intelligent processing power helps to remove bottlenecks from mainframe computing and deliver computations and content data, at or near a source of origin, almost instantly – thereby processing information closer to the end user. Everything you need or want, served up smarter and faster (around 10 milliseconds or less).

This is a way to decentralise computing power and allow for static information to be processed much quicker and delivered where data is generated, as well as where the internet is accessed.



The perfect edge and cloud pairing

Edge serves as an enabler of digital business functionality and IT solutions, and its distributed approach works really well with cloud architecture. Cloud computing functions according to a centralised structure with a service-orientated model. Edge functions as more of a delivery model with a distributed execution process, which can integrate well with cloud.

This cloud-to-edge approach is already a trend and will surely continue to benefit more mobile and desktop orientated business environments.

This approach allows for high processing capability in remote areas where previously it was near impossible. Vastly distributed systems can benefit many sectors. Although security and privacy concerns are some of the current challenges with this approach, new opportunities within niche markets are something we can benefit from. With this approach, we can better enable a distributed workforce for businesses.

Edge computing is quite versatile. At BBD, we develop numerous beneficial cloud-to-edge uses with fairly quick turnaround times.

Despite these benefits, it's not a technology that's without a challenge or two, some of which involve intermittent connectivity or deficient industry standards. There is a committed drive within the industry to find better solutions for this.

Connectivity is not as big a barrier as it used to be. It's now much easier to connect and receive meaningful data which could be useful for clients who are keen to adopt newer developments and processes. Integration with cloud services also allows us the ability to create infrastructure that is available to anyone.

4 benefits of a cloud-to-edge approach

1. Dramatically reducing downtime

Downtime on any system or website can quickly increase user drop-off. Fewer users are as tolerant as they used to be when the cogwheels behind the information we want catches a speed wobble. It's not just users or potential customers that can be lost, revenue is at risk too. Neither is favourable for any business.

Many organisations and industry experts strive to achieve no more than 5 minutes of unplanned downtime per year. A tough task, but edge capabilities enable monitoring connections between the point of origin and the users, which can almost instantly adjust for any glitches it picks up. Downtime challenges sorted.

2. Enhancing performance and security

By moving the point of control closer to a user, information can be delivered across a network a lot quicker with considerably improved security. Less latency and a non-constant need for

connectivity also helps to improve performance with fewer interruptions.

3. Multi-cloud infrastructure, an added bonus

Flexibility, resilience and enhanced performance are some great benefits of multi-cloud infrastructure. When paired, edge technology helps to manage a domain name system (DNS) as a way to enhance resilience. This in turn helps improve application performance. Traffic across multi-cloud environments can also be better managed through this process.

4. Optimised user experience

When the needs of the user are met, the ideal overall experience is achieved. Today, a personalised experience is favourable and so edge technology is a fitting way to achieving this. The end user can receive rich content with which to engage. Cloud strategies can also include edge services so as to provide users with quicker responses to submitted queries. What we need, as and when we need it.

The future of computing, thriving on the edge

The projected global worth of the edge computing market is estimated to increase at a compound annual growth rate (CAGR) of 35.8% by 2024. In addition, mobile edge computing is expected to increase at CAGR of around 51% by 2025. With significant growth comes the need to facilitate solutions that keep up with the demand.

With data (and massive amounts of it) being one of the primary drivers behind the advancing of IoT, solutions for collecting, sending and processing it in more intelligent ways offers organisations the opportunity to really make the most of the insights it can provide – and in a shorter amount of time. Efficient processes mean more effective business practices with enhanced performance potential.

Traditional data centres are seemingly phasing out as an increased interest in developing infrastructures that deliver services closer to the end user. Collecting and processing data at the closest point is well and truly in demand and looks set to stay that way.

Dieter Roych

BBD EXECUTIVE HEAD OF CLOUD

Nick van der Schuyff

BBD IT TEAM

THE MICROSERVICE METAMORPHOSIS

Through the experience BBD has gained in the abstraction of core banking platforms and defining APIs at the appropriate granularity for each client environment, along with our experience in building cloud-native client-facing applications that can scale independently of the core banking platform, BBD understands what it takes to digitally transform the banking sector.

With an undeniable global trend towards these transformation programmes, banking is one of the sectors undergoing a major software metamorphosis. As typically early adopters, we have not only seen, but enabled banks to move from large on-premise monolithic structures, to microservice-based platforms hosted in the cloud.

Many of the projects BBD takes on are part of these larger core banking transformation programmes. As

financial service systems are a very complex set of mature products, processes and data, banks are taking the following approaches to the problem:

- Transforming from the inside out
- Building new offerings entirely on the side
- Becoming a platform and offering services to external fintechs via Application Program Interfaces or APIs

These approaches to updating the current monolithic architectures are also being combined with new ways of working (Agile, Lean, etc.) and new modern technologies such as cloud, microservices, containerisation, REST APIs and big data.

Unfortunately, we've noticed that many of these newer ways of working and technologies are tripping large companies up and slowing down their journeys, rather than speeding them up as they hoped. Large regulated

financial service institutions are not like Spotify, Netflix or Square, they are much more intricate and must deal with legacy systems on top of data and organisational complexity. These large institutions also make use of many sophisticated products in a highly regulated financial infrastructure and make use of multiple core systems that make up the overall banking platform.

The fact of the matter is that these new ways of working are not a silver bullet; they don't automatically introduce a ten or hundredfold improvement in delivery time. At BBD, we take a pragmatic approach to our role in these large transformation projects, using newer tech and approaches only where appropriate. It's ultimately about what will work best for each operation.

Although microservice-based architecture has many benefits, a common mistake is to jump into



them and immediately try break the complex banking domain into many finely grained services, containerise these and then scale the infrastructure on to the private or public cloud. This approach leads to more complexity in the calls between the multiple microservices, and ultimately to the failure of the new technology initiative. And it's not because the technology doesn't work, but rather that there is a lack of understanding around the intricate banking domain; and that it's not often the infrastructure that even needs to scale.

BBD's pragmatic approach is to first integrate coarsely grained APIs into the existing back-end capabilities as REST Web Services, supported by microservices, Java, ESB, or their own service platform accelerator, and then manage both existing and new business processes across these coarsely grained APIs. BBD tries to steer away from unnecessarily using new technologies in this core banking

space for multiple reasons, some of which include:

- Limited technology skills available inside banks
- The circuitous banking domain
- No need to always add scale as the core systems are often able to process transactions at scale already

In this initial stage, we are not looking for the benefits of scaling, but rather for the benefits of abstracting some of the core systems into the beginning of a banking service platform.

The latest technologies are often used in digital front-ends while their supporting back-end integrates into the coarsely grained APIs into a newer and more innovative offering without having to completely re-engineer the core systems. Front-end digital capabilities can be built in-house or by fintech service providers – independently from the back-end. It's therefore possible to move quickly and use the 'latest and

greatest' technology in the front-end.

Key capabilities that have been exposed through REST APIs include account onboarding, current accounts, home loans, value added services and card management. Investment banking project experience includes foreign exchange, investment products and trade finance capabilities.

As the client offering matures and front-ends start to demand scale, BBD uses our experience to refine the granularity of the APIs where needed and where issues or bottlenecks crop up.

Matthew Barnard
BBD UK DIRECTOR



bbd @ devconf 2019

This year marked DevConf's fourth annual conference and saw industry leaders and tech enthusiasts coming together to chat through a smorgasbord of trending software and hardware related topics.

Hosted in both Joburg and Cape Town, the one-day event boasted Clifford de Wit as keynote speaker. He covered the evolution of software engineers and spoke to the impact they have on the world and society as a whole.

Other main themes revolved around the importance of women and equality in the ICT industry, UX/UI design tricks, the rise of DevOps and Agile techniques, microservices, the cloud and the reality of burnout. These talks provided attendees with an opportunity to learn the practices and principles necessary across a wide variety of disciplines to tackle current and future challenges in South Africa.

Despite the midday evacuation (caused by someone accidentally setting off a fire alarm in the kitchen), DevConf delighted again this year. We don't joke about our birthstone being a coffee bean and BBD switched it up a bit by opting to be the main refreshment sponsor. Let's just say that we made sure attendees stayed fuelled with great coffee and delicious smoothies.

Mike, Gery and Claire were selected to speak this year and did us very proud. Read all about their unique talks on the next page, or check out all the talks from the Joburg conference on the YouTube playlist accessible through this link to the keynote address:





Gery: The 'I' in IoT

IoT, one of the biggest buzzwords of our time. We are not the people who are good at connecting the wires and components and we really don't want to have to worry about that little bit of static electricity that can blow up that fancy microchip. Gery's talk looked at how we can write good quality software for devices and where the software fits in to this world of "things", or as she likes to call it, the "I" in "IoT".



Mike: A (re)introduction to JavaScript

JavaScript is weird. It is a product of its failures as much as its successes. As a language, it is both modern and outdated. Cross-platform, yet not. Interpreted, but can be compiled. Loved, yet reviled. With new sets of features ratified into the ECMAScript standard and rolled out by browser manufacturers each year, JavaScript's continual evolution can be frustrating. But it provides us with an opportunity to embrace change, unlearn what we take for granted, and fall in love with JavaScript (again). Mike (re)introduced this contrarian language – making fun of its foibles, mitigating its faults and emphasising its strengths. He showed which parts of the language you can use and when you should use them.



Claire: Pink hardhats and other anomalies

Did you know, a diverse team is 35% more likely to produce above-average results? From the science behind why diversity boosts performance, to why being the only woman in your project team is more of a problem than you might think, Claire took a closer look at the realities of inequality in our industry, how each one of us has a role to play in the solution and what we should be doing to move our industry forward.

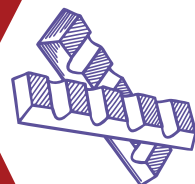
Katie Cubitt

BBD MARKETING TEAM

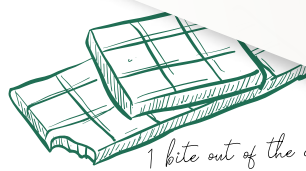
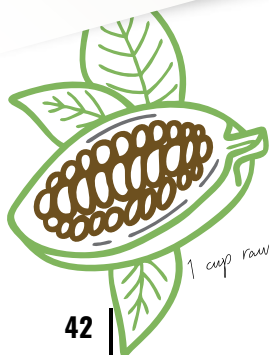
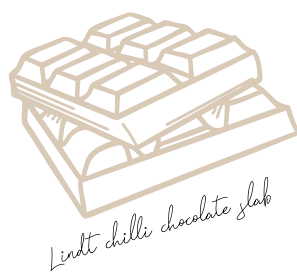


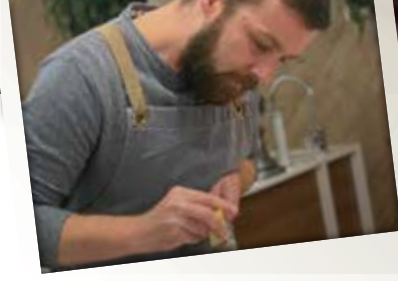
A CULINARY MASTERCLASS

Lindt caramel chocolate



Lindt





Considering our constant cuisine-related conversations, the admin team decided that it would be logical and appropriate to enhance our culinary skills for this year's teambuilding. The day started off with a quick bite to eat upon arriving at the City Lodge in Fourways. With a muffin and coffee in hand, the team headed off to the Lindt chocolate making factory to become amateur chocolatiers. Quickly becoming pros, we created an array of assorted chocolate truffles before being treated to an informative and enlightening lesson on the magical process of converting cocoa beans to chocolate!

Sugar-rushed and somewhat parched, we headed to The Rock for a quick drink before trudging off to start our own little cook-off masterclass. Divided into pairs, each team was tasked with creating a unique dish. Suffice to say, if simple tasks like turning on a stove are any indication of culinary abilities, it's safe to assume that some of us should stick to takeaways or spouse-prepared meals...

However, some should consider a career change and join the next Master Chef SA – should we challenge them to enter? Nevertheless, the cooking experience was extremely exciting and

enlightening at the same time - it may or may not have had something to do with cooking with a tad extra wine. We were eternally grateful when the experts stepped in and completed our meals before serving them to us. Some things are best left to the professionals!

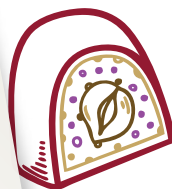
With bellies full, we headed back to our hotel where we scrubbed up and powered our noses for the night's festivities. We enjoyed a lovely assortment of cocktails as we listened to some live entertainment. The evening was filled with laughter, reminiscing on the day and team experiences - putting an end to what was already an incredible day.

On Saturday morning, bright eyed and bushy tailed, the team demolished a full bacon and eggs breakfast buffet before heading out for the activity finale. The choice was ours, either an aromatherapy oil or Thai massage at the Kai Thai Spa in Monte Casino. We definitely needed to relax after all the stress of cooking so many complicated dishes.

Much was learned about each other during this experience and it was indeed a delicious teambuilding. Bring on the rest of 2019!

Sean Bredenkamp

BBD ADMIN TEAM



A top up of Chardonnay

Macadamia nut truffles





IS YOUR

DIGITAL TWIN

AN ARSEHOLE?

As with any new and fast-growing technology, companies should be weary of the possible implications that might arise from adopting it without doing proper research. Don't let this be you.

Despite the concept of a digital twin being around for almost 17 years, it's thanks to the recent surge in interest and investment in technology such as the Internet of Things (IoT), Machine Learning and Artificial Intelligence (AI) that has caused it to become more cost-effective to implement.

So what is a digital twin and why the hype around it?

Simply put, a digital twin is a virtual replica of devices, physical infrastructure or even human behaviour. By combining the digital and physical worlds, analysts can study the data and monitor systems to detect complications before they even occur. Digital twins' true capability has only recently been realised, with an increasing number of industries finding use for them. A newcomer to the market is the financial industry, which uses the tech to mimic their consumers' behaviours.

Although this all sounds fair and well, there is a huge grey area about digital twins that no one is talking about. However, before we can get into the nitty gritty, you need to first understand how digital twins work and what their main purpose is.

How do digital twins work?

Think of a digital twin as the bridge between the physical and digital world, operating in three different stages.

1. Collect

Firstly, digital twins utilise various data sets to deduce various calculations based on inference. They continuously gather new information and begin to analyse it using advanced tech such as AI and machine and deep learning.

2. Simulate

After the twin has gathered enough information, it can start to run various simulations to predict the future. Sure, it can only predict various outcomes based on the initial data that it's fed, but if done correctly, the full range of possibilities is seemingly endless. If this is starting to sound familiar, it's because so many sci-fi movies have adopted this digital simulation scenario, where an impossible task is achieved in a digital environment before it is replicated in real life. Ah hem, *I'll be back!*

3. Apply

Once a scenario is predicted or planned, the digital twin is then able to propose a course of action for a person to review. The person (or even the twin) can then take action.

So how do financial services use digital twins?

Most financial institutions create models based on customer segmentation and groups of people who share a set of common traits and behaviours. By applying the digital twins concept, a firm can actually create individual profiles for each customer. The twin can simulate the decisions that a real-life person might make, achieving a level of predictive analytics that is unique and more accurate than previous models.

The tech is fast becoming a powerful tool that is driving innovation and performance. Imagine having the most advanced operational experts, with state-of-the-art monitoring and next level predictive analytics capabilities at their fingers. Now multiply that by 10.

Playing it safe

Although this technology sounds new and exciting, it is often believed that the latest and greatest tech can boost your processes into the sky. Digital twins aren't always called for and can unnecessarily increase your projects complexity. They can sometimes be seen as a technology overkill, and cost a pretty penny as well. And this is where the problem begins. Often improper management of data can be witnessed, with various companies expecting their systems still to work. Trying to capture the behavioural patterns and mannerisms of a consumer is exceptionally hard. Your digital twin is only as good as the data added. Proper model validation and model management processes will need to be strictly followed to ensure that your data stays up to date and relevant.

Once your company has implemented digital twins, you need to be able to trust the outcome. In order for this to happen, you will need a reliable and strict programme to ensure that your people follow the correct processes, structure and technology to meet all the necessary standards.

A particular point to note is that you need to ensure that your outcomes are unbiased and that they can be explained by a financial advisor, even if the results are not as expected. All too often we see companies investing heavily in tech such as digital twins and not reaching their desired goal or outcome. You have to be prepared for the outcome to be different to what you had originally planned. Your digital twin could very well turn out to be an arsehole. Sure, you could take out all the negative data to paint a perfect picture, but what stopped you from doing that before you spent copious amounts on the tech? You need to trust the result and if it doesn't match up to your brand, you face a decision on whether you choose to act on it or not.

It is also worth mentioning that clients and their behavioural patterns are sensitive in nature, and so if you are looking to replicate this information, your data would need to be strictly monitored with relevant privacy policies in place. Alongside this, running a digital twin simulation is power intensive and you will need a large computational load to manage the system.

With that all aside, technology such as digital twins truly has the capability to allow companies to get to know their consumers through and through. By bridging the gap between consumer and company, you are able to get a more personal understanding of how they act, react and how to create a good impact. Once you acknowledge that humans are significantly more complex than machinery, and many outcomes are unforeseen and difficult to replicate, you can use that information to reap greater insights and empower unprecedented growth. At the end of the day, it is your choice whether it's worth it or not.



Matthew Barnard

BBD UK DIRECTOR



CELEBRATING



The year is 1984, Apple Computer Inc just unveiled their first ever Macintosh, Prince released his hit album "Purple Rain" and Barone, Budge and Dominick came together to form something amazing, BBD.

Since then our family has grown to over 700 highly talented tech experts with offices around the globe, won a few awards, been voted as the best company to work for and changed the world - one line of code at a time. Lots has changed over the past 35 years we've been around. Join us for a stroll down BBD memory lane.





1995 - 2011



1995 - 2011





2012



Memory lane



1984

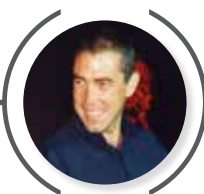
BBD established by Sandra Barone, Tom Budge and Ralf Dominick

BBD's first computer, a Convergent Technologies nGen with 4mb of RAM and 50mb hard drive space



1988

BBD hired our **longest standing employee**, Ana, and she is still with us today



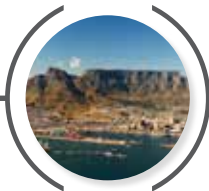
1989

Peter Searle, **BBD's CEO**, started as a junior developer at the company



1995

BBD owned a couple aircrafts. There were tax incentives to own aircrafts in those years as they were considered a strategic asset for the country. Once the tax laws changed, the aircrafts were sold



1998

Opened offices in Cape Town originally named Foundation Technologies



2002

18th Anniversary - we're finally legal



2004

The First BBD Bulletin, our magazine, started as a 2-pager for our 20th birthday in September

BBD launched our **first book** 'NET Enterprise Solutions'



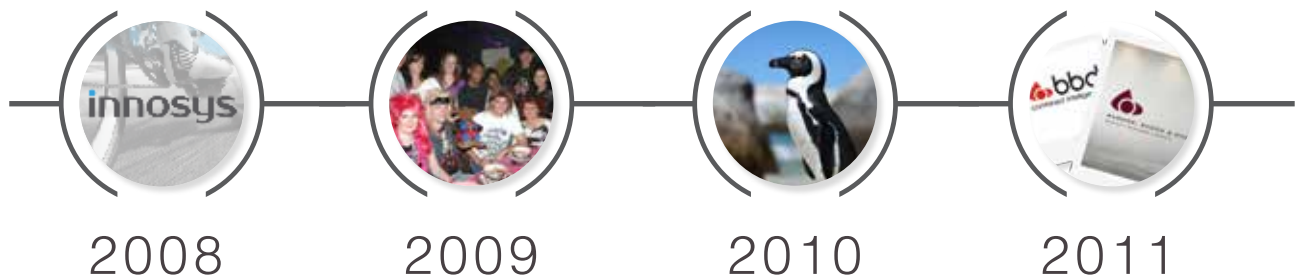
2007

Innosys (Pty) Ltd opened

Sphere Holdings acquires 35.75% of BBD

Opened offices in Pretoria

CT offices got a **new home**



2008

Innosys opened offices in Bulgaria

2009

25th Anniversary

2010

Allan Gray Retirement annuity kicked off

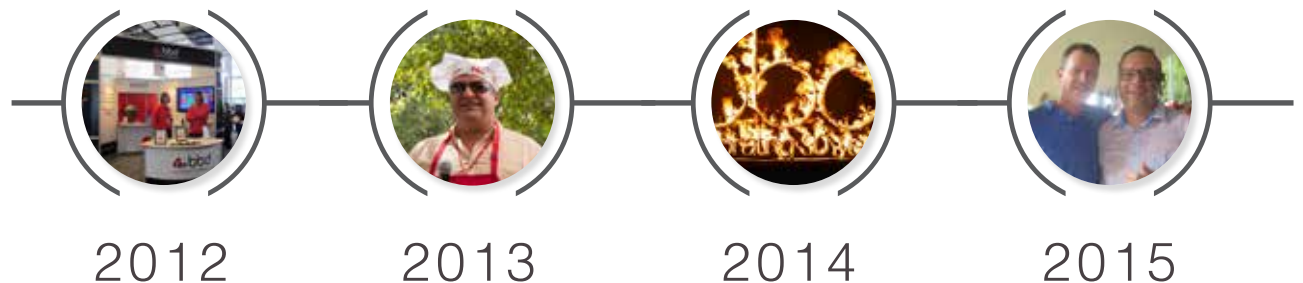
BBD adopted a penguin

2011

BB&D became BBD with over 400 employees

BBD helped Vodacom go red to clone Vodafone's global branding in 2 months

Award Nominations launched to give recognition for outstanding BBDers



2012

BBD opened a virtual press office with ITWEB

BBD joins ITWeb and Airwatch in **sponsoring first Gartner mobile seminar in SA**

Joined **YouTube**

2013

BBD reached 500 employees

Stratco Potjie Piekniek where they paired up to see which team could make the best potjie

BBD adopted a buzzard

BBD increased annual leave days

We held the **Funk Off dance competition** - check out the entries on our YouTube page

2014

30th Anniversary

Opened offices in India

BBD **publish a cookbook** after our 30th birthday recipe competition where staff submitted favourite home-spun family recipes

2015

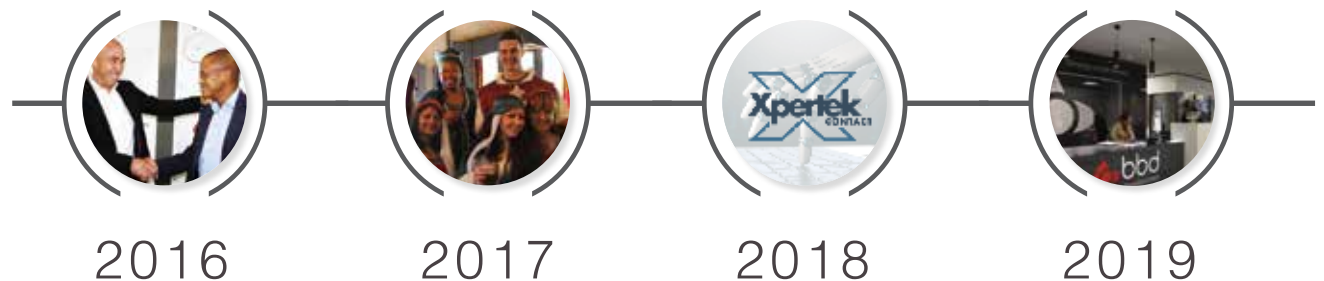
First Bierfest – German themed (hippo incident)

BBD JHB moved into new offices in Killarney

Became a **Devconf sponsor**

Hosted our first **singles pool tournament**

Launched Esc@pe, our internal tech event



2016

BBD becomes 51% black-owned

We are now a **founding member of WeThinkCode_**, an NPO aimed at closing the digital skills gap in Africa

We introduced our **free car washes**

2017

Fusion Software joins the group

Reached **700 employees**

We held a **Mannequin Challenge** video competition

2018

Xpertek joins the group

Ilion joins the group

BBD becomes a **level 2 B-BBEE contributor** with a 125% recognition level

BBD website gets a revamp

We held a **'Got Ink?' tattoo competition**

BBD offices are revamped

2019

35th Anniversary

BBD reaches over **36 000 followers on social media**



2014



2015



2016



2017



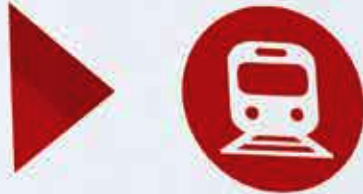
2018



2019



bbd
software development
www.bbd.co.za



BBD BRINGS THE GAUTRAIN TO YOUR DOORSTEP

DESTINATION TO AND FROM ROSEBANK STATION

TRANSFERS Monday - Friday

COLLECTIONS 07h10, 08h10 - Rosebank
16h15, 16h45, 17h15 - Killarney

Collection from Rosebank - follow Gautrain signs
to the shuttle / taxi area on Oxford Road South

Coding a future with BBD

To celebrate Youth Day this year, BBD asked the WeThinkCode_ (WTC) first and second year students to create a video on why they think our youth should get into coding, and post it to our Facebook or Twitter pages using #CodeMyFuture.

The WTC students went all-out to show their enthusiasm for the industry and the youth, giving us some incredibly creative entries, and a really difficult judging decision. At the end of the day, Matthew and Vukuzakhe were tied for second, with Sandile taking first place.

A huge well done to each student who took the time to show their SA pride!

Chris McCully and Thabang Ledwaba

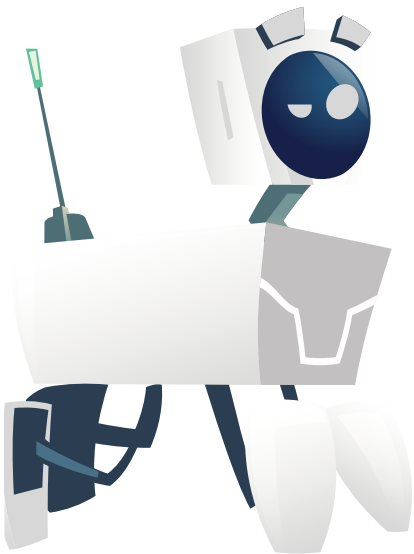
BBD WTC TEAM





A collection of various weapons and tools arranged vertically on a white hexagonal grid background. The items include: a white drone with blue propellers at the top; a blue shield with three white stars; a grey rocket launcher; a silver wrench; a dark battle-axe; a long silver sword; a green and black rifle; a grey and orange mallet; a silver spiked club; a blue and white parrot; a wooden baton; a yellow pixelated coin; a blue handgun; a black scythe; and a white mug of beer with orange foam at the bottom.

BBD CIO



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like to share with the rest of the business
to marketing@bbd.co.za ⚡

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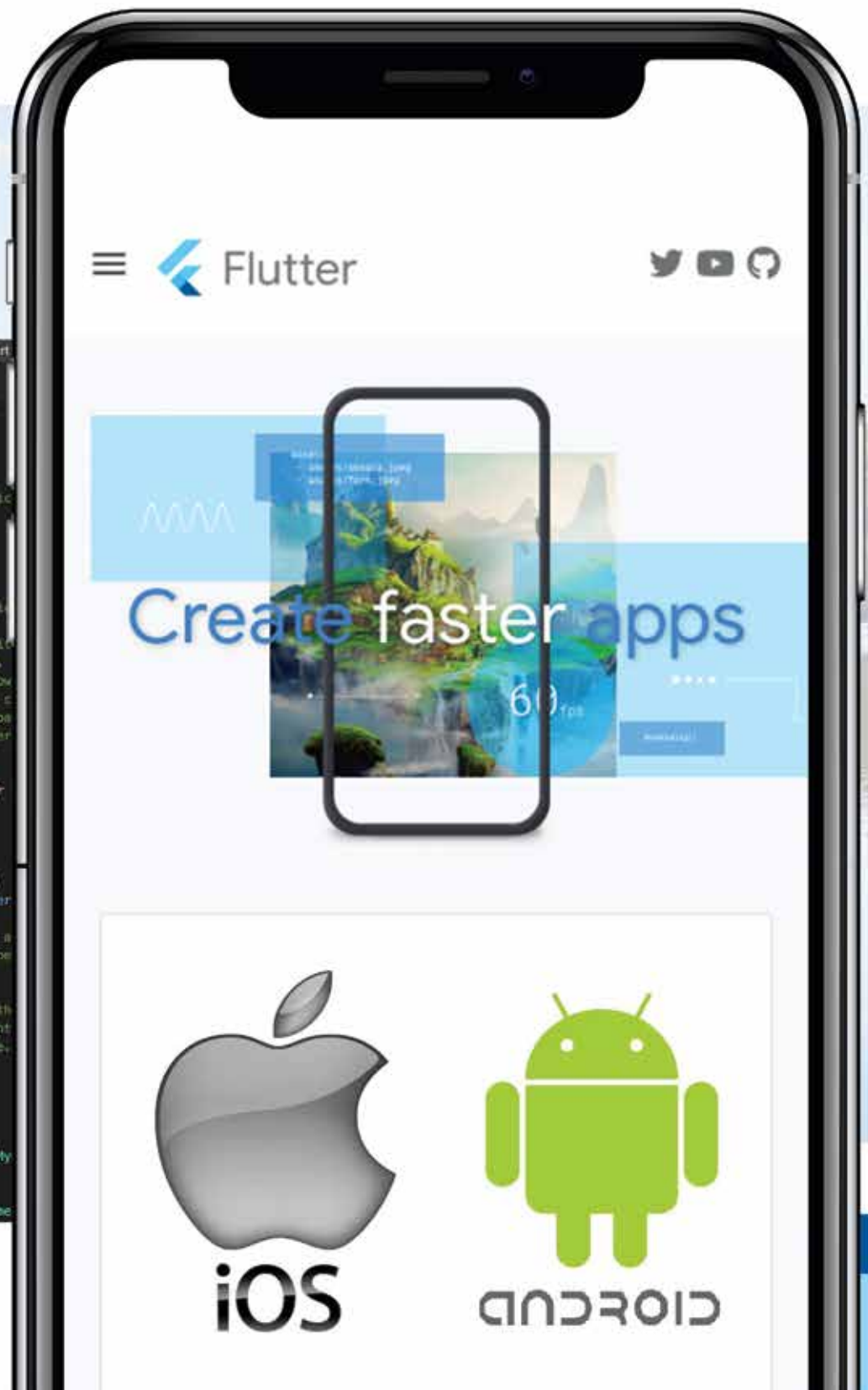
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 /bbdsoftware

What's all this **Flutter** about?

```
main.dart
E main.dart x
1 import 'package:flutter/material.dart';
2
3 void main() => runApp(new MyApp());
4
5 class MyApp extends StatelessWidget {
6   // This widget is the root of your application
7   @override
8   Widget build(BuildContext context) {
9     return new MaterialApp(
10       title: 'Flutter Demo',
11       theme: new ThemeData(
12         // This is the theme of your application
13         // Try running your application with
14         // application has a blue toolbar.
15         // changing the primarySwatch below
16         // "hot reload" (press "r" in the console)
17         // or press Run > Flutter Hot Reload
18         // counter didn't reset back to zero
19         primarySwatch: Colors.blue,
20       ), // ThemeData
21       home: new MyHomePage(title: 'Flutter Demo Home Page'), // MaterialApp
22     ); // MaterialApp
23   }
24 }
25
26
27 class MyHomePage extends StatefulWidget {
28   MyHomePage({Key key, this.title}) : super(key: key);
29
30   // This widget is the home page of your application. It is shown
31   // when the application has been launched, first time it is shown in
32   // how it looks.
33
34   // This class is the configuration for the widget. It is used by the
35   // build method of the State, which is used by the build method of the State,
36   // always marked "final".
37   final String title;
38
39   @override
40   _MyHomePageState createState() => new _MyHomePageState();
41 }
42
43 class _MyHomePageState extends State<MyHomePage> {
44   // This is the state of the application. It is used by the build method of the State,
45   // always marked "final".
```





In case you missed it, Flutter, the new kid on the mobile development block, allows you to provide a sleek solution for both iOS and Android development platforms using the same source code. This “*write once, run anywhere*” approach made famous by Java makes app development a lot more efficient.

Backed by Google, Flutter allows you to write your code once in a new language called Dart. Running as both an engine and a framework, this ingenious platform introduces an alternative approach to the traditional web-first, JavaScript-first model. There are plenty of frameworks that try to allow you to leverage off of web skills and write traditional web code that then gets compiled (or transpiled) into something an app or hidden browser can render. But by decoupling the underlying rendering engine on any particular platform, Flutter can provide a solution for each. Currently, iOS and Android are supported, but web and later desktop will be built from the exact same source code.

Flutter provides a full development workflow with a hot reload capability and also focusses on making the final app experience the best it can be with extremely high framerates in 2D, constant 60 fps, and the ability to run on older devices starting with Android Jelly Bean (4.1) and iOS 8.

With Flutter 1.0 only having launched in early December 2018 and Flutter 1.5 launched on 7th May 2019, just before Google I.O, development and investment in this platform is moving forward at speed.

So how does Flutter differ from other frameworks?

Flutter takes responsibility for rendering its own version of the underlying operating system's standard control and user interface (UI). While it supports Material Design, which by no coincidence happens to be the basis of Android, this does not imply that the Material Design for your app is Android.

Flutter being built on Material Design is something that you need to get your head around when you start using the platform. In the early days of mobile apps, it was important that your buttons looked precisely like the underlying OS as this is what gave it a native feel. Of course it's possible to build apps using the Material Design to give an Android look, or with the so-called ‘Cupertino’ library to provide an iOS look, but using Material Design gives you a whole design canvas on which to be creative.

I have come to learn over the years that the design

language of your app should be as unique as the app itself. Just look at the leaders like Netflix and Airbnb who design their apps independently from the underlying platform they run on. Every app should be designed to have its own unique design flair, hence why Material Design as the basis comes in handy.

Flutter is also all about widgets, and optimally manages the rendering of them to keep a high frame rate.

So why does Flutter use Dart as its development language?

Flutter uses Dart because it compiles ahead of time and as a strongly typed language, picks up many issues at compile time. But Dart can also be compiled just-in-time allowing for a rapid development workflow cycle. This enables you to hot reload, or visually see changes quickly, without losing state, while making changes in the app.

Mobile development has become more straightforward in the last couple of years, with there only being two dominant platforms: Android and iOS. Given the recent developments in the USA, with Huawei no longer being allowed to use Android, I believe that mobile platforms might diversify again soon to at least three mobile platforms, and that Flutter may therefore be a more strategic move by Google than we realise, to capture more of the development market. Either way, Flutter should be considered a serious player in the cross-platform development world.

Peter Scheffel
BBD CDO





HOW TO BOOK A BBD BOARDROOM

01

Select '**Outlook Calendar**'

02

Click '**New Meeting**' and invite your attendees

03

Select '**Location**' on the left and pick the boardroom you want

04

Then select '**Scheduling Assistant**' to check if the room is available. If not, go back to 'Appointment', delete the room and select another boardroom

05

If you need any snacks or refreshments, please email stockorders@bbd.co.za with your requirements and the meeting details

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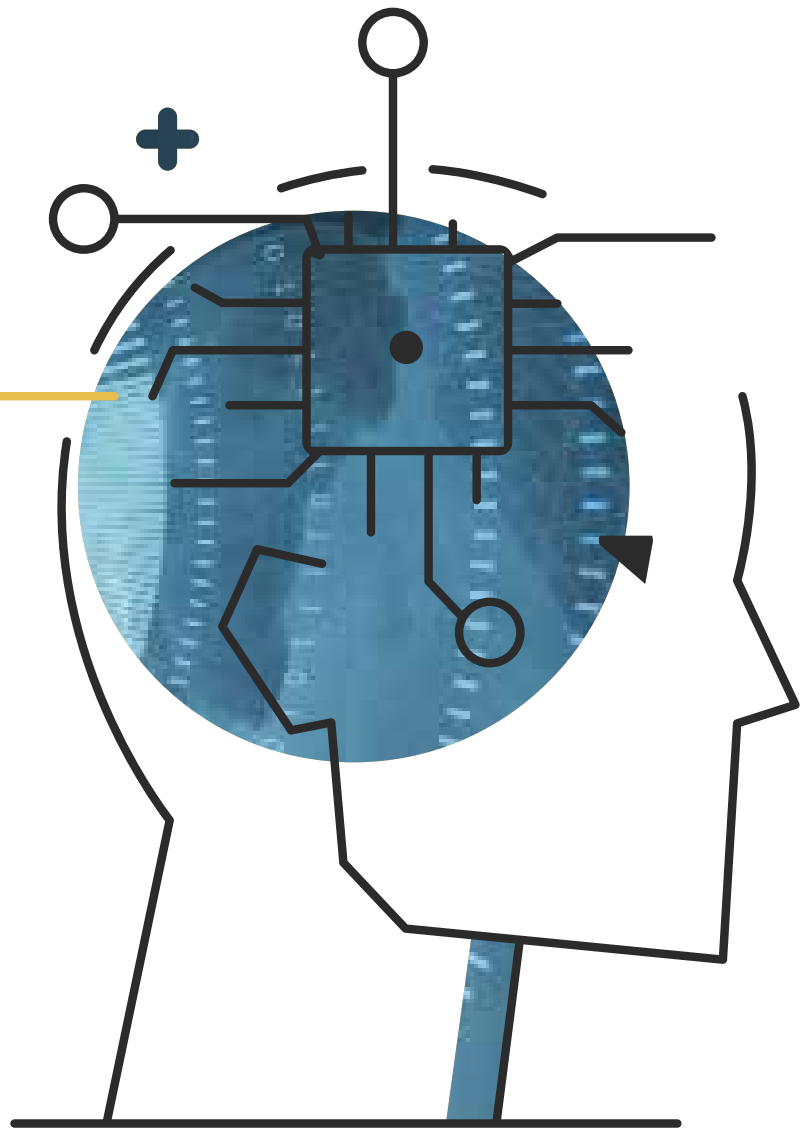
Scan below to read through the Talent Hunt guidelines



Scan below and follow the steps on the portal to **submit your candidates**



STARTUPS



Despite how they are positioned in the media, disruptors really aren't about technology. They are about complete focus on the customer's real needs.

For most insurance businesses, but especially advisors, the kinds of technology linked to the big-name insurtech disruptors can be hugely daunting. After all, the closest most of us get to artificial intelligence is trying to persuade Siri to correctly dial a phone number for us.

If you're awake in the early hours worrying about the approaching end of the warm-blooded financial advisor, your unease probably isn't limited to the looming tech disruptors. Everywhere you turn there is a deluge of advice on digitising your business, much of which comes with a thinly veiled threat that failing to do so means you'll never be able to keep up with regulatory compliance.

Employing a room full of PhD'd computer scientists isn't an option but neither is continuing to run your business on spreadsheets. So, what is an advisor to do?

- Read. TechRepublic, Wired and Forbes are good sources of easily digestible info. If you are technically inclined, look at online courses from Pluralsight, Coursera, or Udacity. You may only be exposed to leading technology through your underwriters' systems but understanding the concepts will put you ahead.
- Name the problems you hope to solve with technology before implementing anything. When you have a hammer, everything looks like a nail.
- Know that many of these problems will not need a tech solution. A good review of your business processes is often enough.
- If you can't be objective about the previous point, engage professional advice before spending a small country's GDP on a doomed IT project.
- Start small. No, smaller. Smaller still. Good, start there.

- It must be measured to be managed: consider which business metrics will tell you if things are improving after the technology solution has been implemented. Be diligent about measuring these and ruthless when you aren't seeing returns.
- Be completely honest about your internal capabilities and open to external help. While you may be comfortable managing mainstream technologies within your business, newer ones will call for skills you may not yet have.
- Be a savvy tech consumer. If there are technologies that will differentiate your business or that you believe should work differently to what's available off the shelf, these are the ones to build or buy outright. For everything else, look at providers with rental or subscription offerings.
- Make peace with The Cloud. Using on-demand software services will mean your data is stored or processed on servers that you don't own or control. Know how data can be protected in the cloud, what will be legally required of you when collecting and transmitting data, and then let go.
- Don't be sulky about the insurtech disruptors. Look fairly at what consumer problems these businesses are solving and use that insight to improve how you operate.

Despite how they are positioned in the media, disruptors really aren't about technology. They are about complete focus on the customer's real needs. And that's a great guiding principle when trying to make sense of technology in your own business.

Claire Wood
INNOSYS CEO



DOUBLES POOL TOURNAMENT

After a 10-year drought, the BBD Pool committee decided it was finally time to host another Doubles Pool Tournament. One of BBD's founders, Ralf Dominick, caught wind of this and decided to personally double the prize money in celebration of the tournament's return!

Although the thought of trying to get people away from their busy schedules was initially very daunting, the tournament turned out to be a great success. We had planned to host the competition across our Cape Town, Pretoria and Joburg offices, but with scarce entries the Cape Town and Pretoria offices were unable to participate. We really hope everyone joins in next time though!

Contestants were split into two teams and competed against each other in round robins. The top four teams from each side progressed to the quarter finals. With an official ref in place, drinks and snacks at the ready and all supporters gathered around, it was then time to get the semi-finals underway. The semis didn't disappoint with the underdogs defeating the tournament favourites and some exceptional plays witnessed.

The finals were truly world-class, and well worth the Friday evening at the office. As the two teams battled it out in a best of five, Koketso and Kenneth crept ahead leading two games to nil. An easy win surely? That is where you're wrong. The third game turned it around with a tragic sinking of both the black and white ball. Nelson and Renaldo swooped in to take advantage of the opportunity and came back to win the tournament. Let's just say the crowd went wild!

Congratulations to every participating team, but especially to Nelson and Renaldo on the brilliant win, taking home R2000 cash, and to our runner's up, Kenneth and Koketso, who pocketed R1000.

We look forward to seeing all BBD offices around the globe getting in on the next tournament!

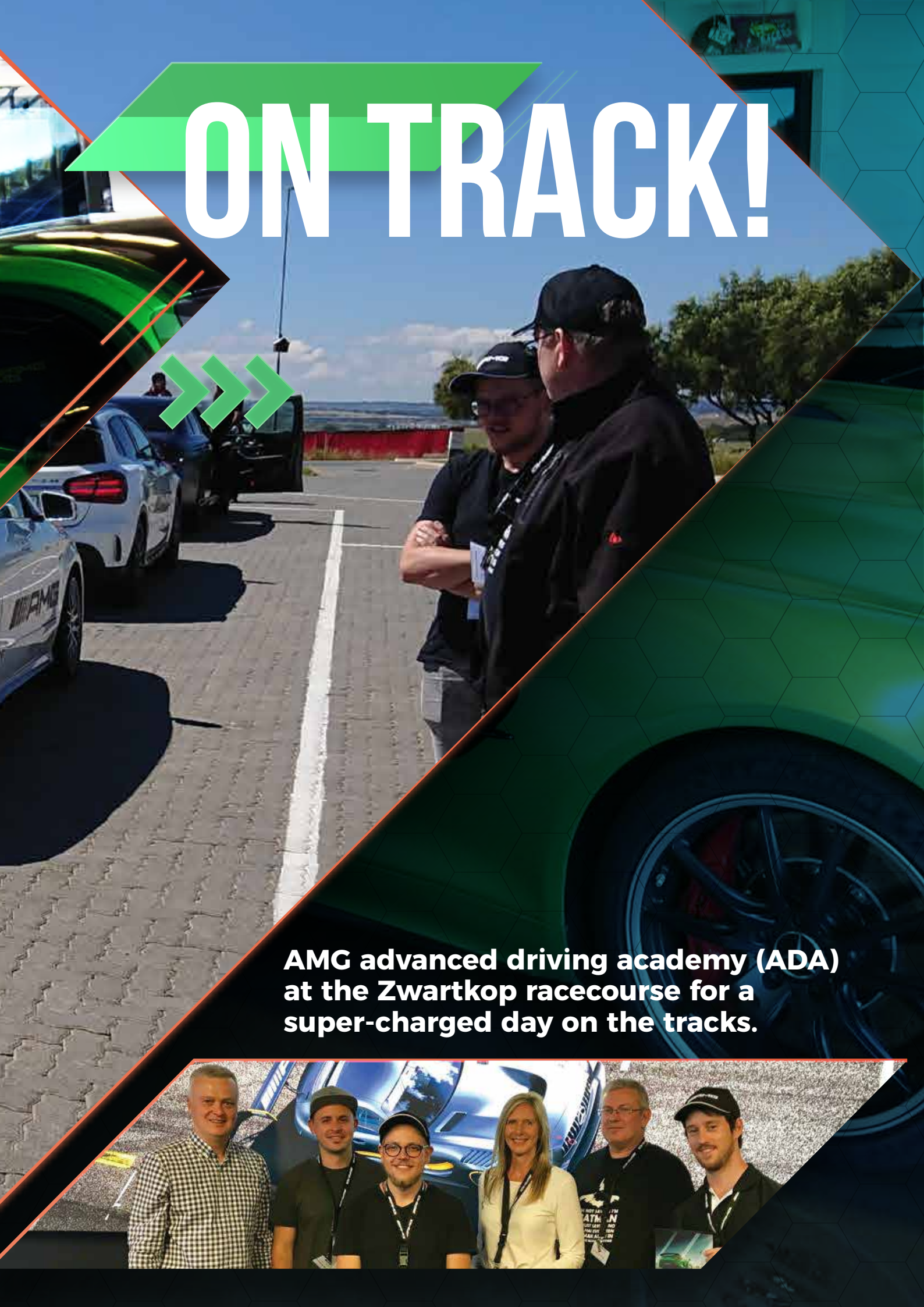
Vandra Niehahn

BBD ACTURIS TEAM






ON TRACK!



**AMG advanced driving academy (ADA)
at the Zwartkop racecourse for a
super-charged day on the tracks.**





At the crack of dawn, the BBD team based onsite at Outsurance arrived at the AMG advanced driving academy (ADA) at the Zwartkop racecourse for a super-charged day on the tracks.

It's been two years since our previous teambuild event and we were all looking forward to the day's activities - especially the petrolheads of the group - while the rest of us approached the day with mild trepidation. After a quick check-in and briefing on the history of AMG, we were taken through some of the specifications of the vehicles we'd be driving. At this point we were all raring to go!

We headed off to the skidpan, a training facility where we split into pairs, and hopped into Mercedes AMG C63, each with our own instructor.

They first demonstrated how the ABS (anti-lock braking system) would work in conjunction with the ESP (electronic stability program). Each instructor showed the teams how the system turns off while attempting a sudden stop on a slick, wet surface, and then how the ABS reactivates.

The next exercise was to attempt an oversteer with the ESP fully engaged, then partially engaged and finally, fully turned off. With the ESP running at 100%, many of us found it difficult to get the car to behave. With it turned off, it was doughnut time!

We then had the opportunity to experience the Mercedes AMG A45 on the open road. The convoy was led by an instructor and the pace was fairly laid-back.

After a quick bite to eat, we were given a track briefing and watched a video about the various electronic support systems built into the ESP framework. We then had a brief but intimidating demonstration on exponentially

increasing stopping distances at increased velocities. The instructors took us for a few laps around the track and explained the meaning of the various cone placements. Now it was finally time to let rip in the super-charged, unhinged beast of a machine.

The on-track favourite was the Mercedes GLA 45. Its lighter weight and 4-wheel drive made even the novices among us look like rally drivers.

Charlie surprised us with his inner speed demon - don't let his mild-mannered Dr Jekyll façade fool you, he is a Mr Hyde on the track! (He's also currently in the market to replace his car so we're all now wondering after this what his final choice will be.)

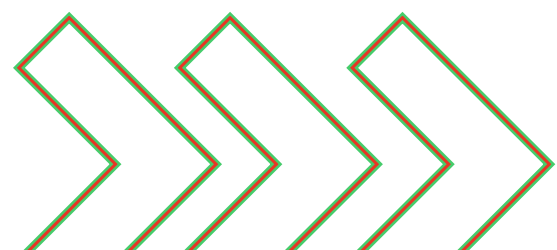
The Mercedes C63 was a monster on the track. With its increased weight and rear wheel drive, we had to be a bit more careful while turning into corners. That said, its 4.0L V8 biturbo 375kW/700Nm gives some extra speed on the straights. We reckon it could easily beat the A45 on a track like Kyalami.

We ended the day with a small ceremony where all the day's participants received certificates of attendance. We left with the throaty roar of the C63, that's more Mustang than Mercedes, still ringing in our ears and thumping in our hearts.

Thank you to Sue and André for arranging this incredible and memorable day. As a team, we certainly feel 'on track' to achieve even more going forward.

Werner van Niekerk

BBD OUTSURANCE TEAM





STEPS TO MAKE YOUR BUSINESS CLOUD AGNOSTIC

Cloud lock-in is a growing concern for businesses who have invested copious amounts of time and resources transitioning their new or legacy systems to the cloud.

Once the honeymoon phase of transitioning wears off, you start to ask yourself *how portable is my cloud solution?* or *how easy is it to move my systems to another cloud provider?* By then, it's usually too late to avoid the issue and you've locked yourself into using a single cloud provider and their attractive features. This is not where companies want to be.

When the concept of cloud was first introduced, it was explained that cloud computing would work as a utility. There are currently three main cloud providers or utilities: Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform. Each utility uses a different type of plug and runs at a different voltage. They all have elaborate reasons why their voltage choice is the best, but if you want to be a cloud agnostic consumer and avoid being locked in to a single vendor and their features, then you'll need the same plugs with the same voltages.

Now that we know the *why*, let's talk about the *how*. The following five-step checklist can help you make sure your business avoids cloud lock-in.



The easiest way to make your business cloud agnostic is to find a technology partner who understands cloud software development, and work with them to achieve this goal.

Step 1 - Ditch the glitz

Each provider tries their utmost to sell you on their specific cloud lock-in features, because that's good for their business. Whether it's AI, image and speech recognition, or secure authentication that catches your eye, know that it can only be used with that specific provider. If you're looking to be completely cloud-agnostic, ask yourself if you really need all that cloud Kool-Aid to decide whether the flashy extras are worth it.

Step 2 - Container management tools are your best friend

An easy step to take to ensure your solutions are cloud agnostic is to deploy using only standard open source containers and container management tools. In simplistic terms, this means stick to Docker and Kubernetes.

Why? Because they allow for increased deployment agility, control, and can easily run across private, on-premise or public clouds, but are extremely complex to manage yourself.

Step 3 - Onsite first, cloud later

You should deploy onsite before deploying to the public cloud. This allows you to gain experience with your application and become familiar with it in your own environment before running it in a public cloud.

We get it. This step may seem strange to those who believe that they should only be on the cloud, but it should be considered because of the ability it allows for self-hosting your solutions during times of low usage or other scenarios. However, if your organisation has decided to move away from on-premise entirely, then you can skip this step.

Step 4 - Move to the current preferred cloud provider

If you are cloud agnostic, then this decision should be based on cost. The availability of the service should not be a differentiator, and internet speed

should rightfully be consistent across all providers. Each provider should be able to supply you with a managed Kubernetes cluster to host your solution.

What's key here is that your services need to be managed for you to get real benefit in using cloud providers.

Step 5 - Move to other cloud providers or multi-host depending on the best deal

Up until now, this step would sound ridiculously hard and the thought of manually migrating to other clouds would often be shied away from. But with the growth and adoption of newer products in the market, this step is becoming easier by the minute. Google recently launched Anthos, a managed service that allows you to manage your entire cloud deployment (on-premise or to any cloud providers) from a single screen.

Microsoft has yet to succeed in providing an Anthos type solution and despite having been experimenting with the Azure Stack (an on-premise cloud deployment solution) for some time, it has had a slow and with limited capability rollout and requires specific hardware to run. Although Microsoft was the first with the idea to provide a full onsite version of their cloud and pioneered the Azure Stack, they have been slow to deliver on their promise and as yet, the stack lacks many of the features of the Azure public cloud. Microsoft has yet to catch on to the idea to provide a cloud agnostic on-premise stack that could be deployed to any cloud.

The easiest way to make your business cloud agnostic is to find a technology partner who understands cloud software development, and work with them to achieve this goal. With a company like BBD, the ability to make cloud agnostic deployments aligns closely with our own strategy. We help you choose the best way to host your solution across the clouds or to help you unlock your current solution from being able to only run in one cloud.

Peter Scheffel

BBD CDO

GERY GOES GALLIVANTING

With two of the biggest tech conferences happening just hours apart and on other sides of the globe, we chatted to Gery, BBD's IoT and WebUSB guru, who managed to get an inside peek into both events and how they went down. Oh, did we mention that she also presented at both?



Which conferences did you attend and where were they?

My adventure started in Singapore for the international conference for developers, Voxxed Days. Straight after it was time to fly down to Cape Town, South Africa for the Microsoft Insider Dev Tour. My journey came to an end with the second leg of the Insider Dev Tour taking place in Johannesburg, South Africa.

Tell us a bit more about the topics and concepts behind each event?

Voxxed Days originated as a Java conference from the Devovx family of conferences and quickly grew into a multi-tech, multi-nation conference. For the first time, Voxxed Days Singapore ran for 2 days featuring people from around the world speaking on many different topics. For my talk, I spoke on the modern web development track in WebUSB.

The Microsoft Insider Dev Tour conference happens in over 40 locations around the world and is meant for showcasing the latest Microsoft technologies. Essentially, the Microsoft MVPs in each country help with organising the conference and find local tech experts to speak on the topics that Microsoft deems most exciting. Last year was South Africa's debut, which consisted mostly of speakers from Microsoft in Seattle. This year, they decided to invite more local talent to speak, which gave the conference a more relevant experience for local developers. For my talk here, I spoke on building embedded and IoT solutions with Microsoft Windows IoT Core.

Who attended the conferences?

Voxxed Days was aimed at the Singapore dev community but did attract various international attendees. All type of developers attended, as well as some Ops specialists.

Microsoft's Insider Dev Tour attracted developers who currently use Microsoft tech. From beginners to experts, students to hobbyist developers, the Insider Dev Tour accommodates all.

How did you come to speak at these events?

I initially came across the Voxxed Days conference when looking for open Call for Papers (CRP) earlier this year. Shortly after, I submitted my talk and was chosen to present at the conference. Unfortunately they didn't provide travel and entertainment funding, and I was fortunate enough for BBD to pay for me to go.

Funnily enough, after being selected as a speaker for Voxxed Days, I was asked by one of the Microsoft MVPs from Cape Town if I would be interested in speaking at the Insider Dev Tour. Seemingly a good idea, I decided that it was an opportunity not to be missed and so accepted.

What were your biggest take-aways from each conference?

I had never spoken outside of SA and so when it came to the Voxxed Days conference, it was very different and scary to speak to a community of people I did not know. You quickly realise how tight-knit you get in your comfort zone when speaking about a topic, and how it can all change in a second. This conference was a major learning experience for me, but a good one at that!

I learned a heap of new things about some of the latest MS technologies and some new things about the old ones as well. Microsoft is doing really great work in the IoT and Webspace, and it really is exciting.

Favourite moments?

To be honest, the people in Singapore are slightly different to those in South Africa and so most of my jokes didn't really land. There were only a few people smiling which quickly made me nervous. But when my LED turned on and everyone started clapping... It calmed me down and allowed me to feel more focused on the rest of my talk.

Spending time with some of the Microsoft employees and MVPs and getting to see a different part of the dev community was truly a special moment at the Insider Dev Tour. One I will not forget.

How do you feel about having spoken at these two conferences?

They were both great! The mere fact that they were one after the other made it a little exhausting, but I don't have any regrets.

Would you go again?

Without a doubt!

Q&A with Gery Young

BBD ATC TEAM



Sprout up this spring

'Tis the season to get planting. With spring just around the corner, you can do your bit by planting and nurturing an indigenous tree. Here are nine reasons why you should get your green fingers stuck into the dirt this spring...



Strategic placement of trees in urban areas can **cool the air** by between 2°C and 8°C



Large urban trees are great **filters for urban pollutants** and micro particles



Mature trees help to **regulate water flow** and **improve overall water quality**



Properly placed trees can help to **reduce the need for air conditioning** by up to 30%, as well as **save energy** used for heating by 20-50%



Studies show that spending time around trees helps to **improve a person's overall physical and mental health** by decreasing elevated blood pressure and stress levels



Green corridors and parks are recreationally appealing to city dwellers, helping to promote **more frequent physical activity**



Landscaping, especially with trees, can substantially **increase household property value**



A greener city, with urban parks and green corridors abundant with trees, is considered **aesthetically pleasing** to tourists and locals alike



South Africa has more than 1 000 indigenous tree species which can generally maintain themselves even in poor quality soils – indigenous varieties also need less water than foreign species



BBD BLOOD **DRIVES**

Each time you **donate** you
save three lives

Remember to donate at
our 2019 **blood drives** to
help us reach our goal of
saving **300 lives**

SPYRO

REIGNITED TRILOGY



Don't be fooled, if you feel a warm purple spot in your heart when thinking about Spyro the Dragon (as I do), you most likely played this PSF classic when you were younger - the years when the game was praised for its graphics running on a console with 2MB RAM and 1MB VRAM.

Spyro was designed to appeal to younger audiences and to compete with the Nintendo 64 target market. The original Spyro Trilogy boasted repetitive gameplay, a slow ascending difficulty curve and a story line that required a tiny attention-span - boring to any consumer seeking depth and emotional immersion.

But with the Reignited Trilogy, just because there's been an amazing facelift, full of quality of life improvements, a modernised score and all the charm and personality of the original, it doesn't mean that the target market has

changed. This game is still fulsomely aimed at kids and completionists.

Don't let nostalgia ramp-up your expectation though. It's best to accept the way this game is. Play with the mindset of the 1998 version of yourself and you won't set yourself up for disappointment. The studio did an incredible job of sticking true to the original while providing an experience that meets modern tech standards.

If you fondly remember Spyro, consider playing the Reignited Trilogy. Even better, if you have a kid and you would like them to play a wholesome, fun, kid-tested, parent-approved game, put Spyro on your list.

Tiané Erwee

BBD STDB TEAM



STEEP

Take X-games to the x-treme! Explore the Alps in an almost limitless capacity using skis, wingsuits, snowboards or paragliders. Compete in a vast amount of challenges ranging from insane races to showing off your best tricks, and if you want a break, just glide while watching the sunset, or explore the snowy trails and see where you end up.

Steep is a massive open world experience, that goes far beyond being a game. With super realistic graphics and even more realistic physics, you'll find yourself in awe of it. Not to mention it has a pretty decent story line around trying to become the world's number 1, and in the DLC, you attempt to excel in the Winter X-Games to qualify for the Winter Olympic Games.

Play with friends or solo, mastering the Alps and Denali. Use your binoculars to find new locations to start from, switch between various camera views, and review your runs in slow-mo, freeze framed, through multiple

angles and more. Beware though, playing in first-person perspective might just give you motion sickness.

It also includes quite a bit of unlockable character customisation, ranging from new gear to full-body panda or yeti suits. And did I mention the music? Catered to match your speed and intensity as well as the environment - perfect to get you immersed into the world around you.

Brutal falls and epic jumps make this game worth every cent. And if it leaves you craving more, the released DLCs add Japanese and Korean mountain ranges to explore with new rocket-powered wingsuits or sledding. Not to mention adding base jumping and speed riding to the list of awesomeness. Check it out on Uplay or Steam. You won't be disappointed.

Antoinette Henn

BBD ACTURIS TEAM



Vegetarian



Mushroom stroganoff

Quick and easy, this vegetarian dish is hearty, savoury and delicious. Serve over egg noodles, traditional pasta, quinoa, veggies, or whatever sounds delicious to you.

Total time: 30 mins

Prep time: 15 mins

Cook time: 15 mins

Difficulty: Easy

Ingredients:

- 4 cups wide egg noodles
- 3 tablespoons butter, divided
- 1 small white onion, thinly sliced
- 4 cloves garlic, minced
- 4 cups baby bella mushrooms*
- ½ cup dry white wine
- 1 ½ cups vegetable stock
- 1 tablespoon Worcestershire sauce (there is a vegetarian brand)
- 3 ½ tablespoons flour
- 3 small sprigs of fresh thyme (or ¼ teaspoon dried thyme)
- ½ cup plain Greek yogurt or light sour cream
- Kosher salt and freshly cracked black pepper
- Optional toppings: freshly grated Parmesan cheese, chopped fresh parsley, extra black pepper

Directions:

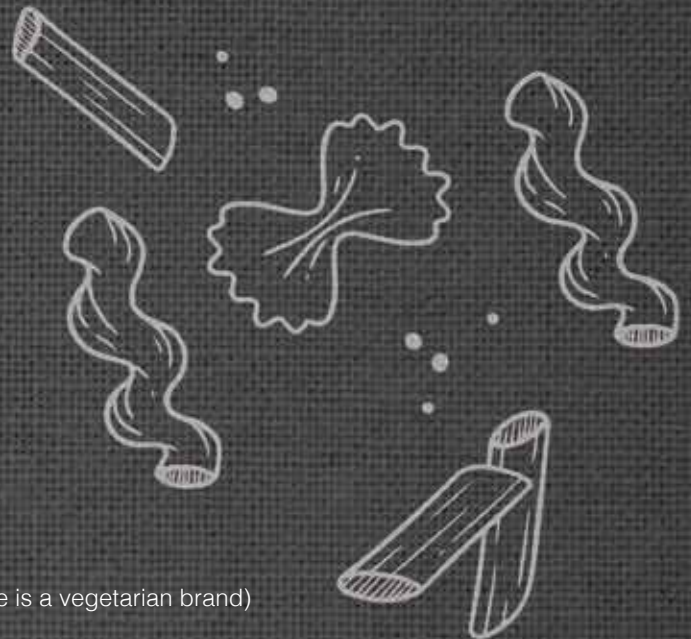
1. Cook egg noodles al dente in generously salted boiling water.

2. Melt 1 tablespoon butter in a large sauté pan over medium-high heat. Add onions and sauté for 5 minutes, stirring occasionally. Add the remaining 2 tablespoons butter, garlic and mushrooms, and stir to combine. Continue sautéing for an additional 5-7 minutes, until the mushrooms are cooked and tender. Add the white wine to deglaze the pan, and use a wooden spoon to scrape the brown bits off the bottom of the pan. Let the sauce simmer for 3 minutes.

3. Meanwhile, in a separate bowl, whisk together the vegetable stock, Worcestershire and flour until smooth. Pour the vegetable stock mixture into the pan, along with the thyme, and stir to combine. Let the mixture simmer for 5 minutes, stirring occasionally, until slightly thickened. Then, stir the Greek yogurt (or sour cream) evenly into the sauce. Taste, and season with a generous pinch or two of salt and pepper as needed.

4. Serve immediately over the egg noodles, garnished with your desired toppings.

*Feel free to use any mushrooms you have available. A mixture of your favourites would be great!

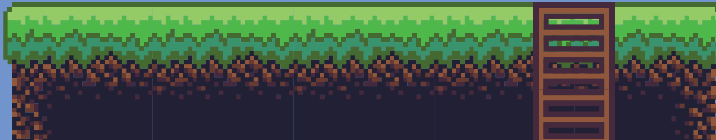
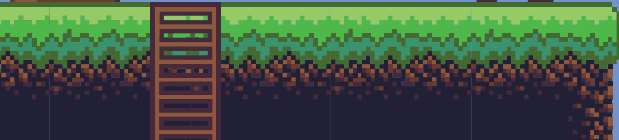
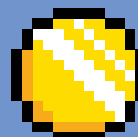


GOCKY CORNER



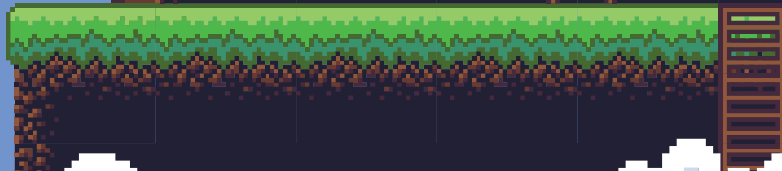
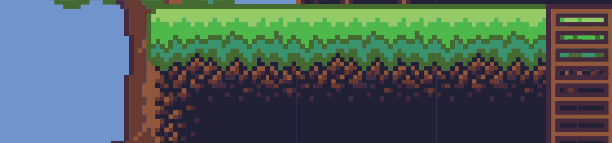
TREASURE HUNT

Find the 7 hidden coins throughout the magazine and email the locations to marketing@bbd.co.za to stand a chance to win



APRIL WINNER

Congrats to Sonia for correctly answering all the Scatterbrain questions in the April edition



2	4	3	1	7	6	5	9	8
7	6	9	3	8	5	2	4	1
1	8	5	6	2	4	7	3	9
3	9	2	5	1	8	4	6	7
5	1	6	4	9	7	8	2	3
8	7	4	2	6	3	1	5	9
6	3	8	7	4	2	9	1	5
9	2	7	6	5	1	3	8	4
4	5	1	8	3	9	6	7	2

HARD SOLUTION

4	1	6	8	7	9	2	3	5
5	9	7	1	3	2	2	6	8
8	2	3	5	4	6	7	9	1
1	6	8	3	9	5	4	7	2
2	4	5	7	6	8	1	3	9
7	3	9	4	2	1	8	5	6
6	5	1	2	8	7	3	4	9
3	7	2	1	4	5	6	8	9
9	8	4	6	5	3	1	2	7

MEDIUM SOLUTION



			6			1		7
3				1				8
	5		2					
					1			6
	4	5		6	8		1	3
	6		3		5			
8	2	3	5	4				
		7	1			6		
4			8		9	2	3	5

MEDIUM 

DO YOU EVEN SUDOKU

								2
		7			1		8	
	3	8						5
			2		3	1	5	
		6				8		3
	9		5					7
1			9		4	7		6
		9	3					1
2								

HARD 

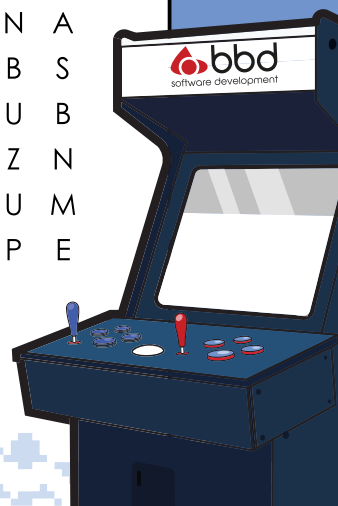
WORD SEARCH

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

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