SOUTH AFRICA'S LEADING GAMING, COMPUTER & TECHNOLOGY MAGAZINE

MAY 2015

NAG

PC / PLAYSTATION / XBOX / NINTENDO / HARDWARE / LIFESTYLE

INSIDE
DIRECTX 12
WHAT THIS NEW
TECH MEANS FOR
PC GAMING

DOUBLE-
SIDED
POSTER
INSIDE!

GUITAR HERO LIVE

IT'S BACK!
ARE YOU READY
TO ROCK?

NINE REVIEWS
INCLUDING

BATTLEFIELD HARDLINE
ORI AND THE BLIND FOREST
BLOODBORNE
ZOMBIE ARMY TRILOGY

EXO ZOMBIES
SURVIVAL GUIDE

DIE LESS OFTEN WITH
THESE HANDY TIPS

Your cover DVD has snuck
off to a rock concert without
telling you. When it returns
late at night, sit it down for a
chat about how disappointed
you are in it, and how things are
going to change from here on.

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Love zombies, but hate having your face eaten by the undead? Then you're going to want to peek at our strategy guide for *Advanced Warfare*'s new Exo Zombies mode. It's full of tips, tricks and nutritious brain recipes.

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DirectX 12 is perhaps the most important development in PC gaming since the advent of the mouse. That's perhaps a tad overdramatic, but it's pretty significant anyway. Let us explain.

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I'm ready to rock

Sometimes it's difficult to not be a fanboy/girl. Okay, so I can't be a fangirl – that's not possible without taking drastic measures – but in the case of the former I occasionally struggle to contain my excitement. That containment was challenged recently when I was invited to London to attend a small hands-on event for *Guitar Hero Live*.

Guitar Hero 2 was where I had my first taste, and was one of those games that gripped me and took years to let go. It and a few of its sequels were my go-to party games. Having a zombie party? Drop those brains and let's break out the *Guitar Hero*. Fancy cocktail evening? Finish it off with *Guitar Hero* and a Martini. Wake? Look around awkwardly and then let's jam those plastic guitars – it's what they would've wanted. Entire friendships were founded or solidified by playing pretend rock stars in front of my TV. For a skill that's almost entirely useless outside of its own small sphere, being good at *Guitar Hero* is one hell of a feeling, and now I get to learn how to do it all over again. Some people are bothered by the fact that their old guitar controllers are no longer useful (although the upcoming new *Rock Band* solves that problem), but I'm looking forward to mastering the new controller with its weird bisected frets. Q4 can't come soon enough.

With that little tribute out of the way, the rest of the magazine is packed with content that I know you'll love. Neo takes a close look at what DirectX 12 is going to mean to PC gamers in the near future; we spent far too much time perfecting the new Exo Zombies mode in *Call of Duty: Advanced Warfare* and share our strategies with you; we get hands-on with previews of *Nosgoth* and the way overdue *Final Fantasy XV*. There are reviews for miles, including *Battlefield Hardline*, which has been the cause of a few interesting discussions about its place as a *Battlefield* game. On the hardware front we've gone a bit mad with things and decided to put a R15,000 solid state drive in the Dream Machine.

WHOOPS!

Last month was our epic redesign and as awesome as the mag looked, we did overwork our poor art director just a tad. As a result, the centrefold poster (featuring our snazzy new Roxy mascot) was put on the wrong page! To remedy that, we've made this month's poster double-sided, with Roxy on one side and a Big Sister from *BioShock 2* on the other. Sorry about the screw-up and I hope you enjoy the posters this month.

ENTELECT

Our friends at Entelect are back this year for another R100K challenge in search of the smartest gaming AI. Participants will be required to code a *Space Invaders* AI which will go head-to-head against AI designed by their opponents. The finals will take place live on stage at rAge 2015. The winner will receive R100,000, and there's a new novice category for anyone who's just getting into programming, with its own prize pool of R50,000. As well as ourselves, Sony Mobile will be sponsoring the event and giving away Xperia devices. Be sure to check out **challenge.entelect. co.za** for more info.

That's all from me for now. Enjoy this issue of *NAG*! **NAG**

GeometriX

> *"... being good at* Guitar Hero *is one hell of a feeling, and now I get to learn how to do it all over again."*

"Letters

*DISCLAIMER ❯ Most of the letters sent to this fine publication are printed more or less verbatim (that means we don't edit or fix them for you slow kids at the back), so ignore any spelling or grammatical errors. It's not us... it's you.

Inbox

letters@nag.co.za

Letter of the Month May 2015

FROM: Tristan Jacobs
SUBJECT: Judging a game based on its... Reputation?

I still cringe, to this day, every time I think about THAT issue. The issue where a much younger, more ignorant and pretty stupid version of myself sent in a letter to NAG. The letters content is very crucial to the topic that I would like to talk about in this letter as it was about how I thought people shouldn't like games with bad graphics. There I said it, and like I said, "A pretty stupid version of myself.".

After 3 years of long and at times tough rehabilitation, I was fixed and now can pretty confidently say that I am a GAMER. The rehabilitation was started partly because of the editors comment to my letter (which was negative), this comment led me to question graphics and the way I judged games at the time.

I used to judge games based on reputation and sales (and graphics) and was the main reason why I used to play games like 'Call Of Duty'. Whenever people were having a debate over which 2 games were better I would always bring up the fact that COD has the most sales. Oh, how ignorant I was. This leads to the main point of this letter and that is that although a game has good sales, does that make it a good game? I know that when a large company like Activision produce a game, they mainly care about sales and the amount of money that they earn from it. Even 'Thomas Was Alone's developer made a whole announcement about how it had sold over 1 million copies. I'm not saying that reaching a milestone like that is not something to ignore but nowadays it seems like figures is all that people care about and not about the games themselves. Games like 'Gunpoint' or 'Papers, Please' , not very well known by most gamers, to me are probably 2 of my favourite games of all time (now that I have seen the light) yet no one

pays much attention to them anymore or recommends them to their friends because they aren't raking in the sales and money and don't have a very well known reputation like the reputation that COD has. This sickens me to the core, yes, to the CORE, about the state of the gaming industry where all the AAA developers are spending more time making a game that will get them the most money rather than risking a little a creating something fresh and new.

The second reason, which led to my change, was the fact that I decided to take the editors advice and I tried Deadlight. To my surprise I enjoyed the time I spent playing it. Now 3 years to that day where I enjoyed a game with "bad graphics", I have played over 100 indie games and 2D games (which I considered to have bad graphics) and now spend less time playing AAA games and rather playing any short and delightful indie game I can get my hands on. Due to this I have also gotten into game making and have made a couple of really small games and soon plan on focusing on a much larger game.

All this was because an amazing magazine called NAG taught me better and has changed me as a gamer.

Thanks Guys!

I had to trim down your letter because it was getting on a bit, but your point is a good one. It fills me with joy that you've branched out and discovered how enjoyable indie games can be. Yes, very often they have kind of rubbish visuals because they're on a shoestring budget. Much of those visual assets are provided as a favour or in partnership with the developers. These small teams are the sort that kicked off this industry all those years ago and it's fantastic that things are coming back that way. As game development becomes more accessible to those of us with bugger-all programming knowledge (like me), the industry will continue to grow, and that's what we want.

Don't count out the AAA publishers and development studios just yet, though. These places know how to produce fun because they've researched and fine-tuned the process. Sure, that fun might feel a little soulless sometimes, but there's still plenty of good stuff that can come from the AAA side of the industry before everything eventually falls apart.

As long as you're playing games and enjoying them, you're doing this whole thing the right way. Hopefully the games we're about to send your way won't ruin your love for indie titles too much! Ed.

> **"**
> *I used to judge games based on reputation and sales (and graphics) and was the main reason why I used to play games like 'Call Of Duty'.*

FROM: unknownimous
SUBJECT: Gaming Schools
I read in your last issue that unreal engine 4, unity 5 and source 2 are now free. Obviously this shows how much easier it is getting for people to try to pursue a career in game development.

I was wondering if you could recommend places where people without any education in programming and development could go to study and specialize in game development in South Africa.

I love the work that all of you guys do with the mag, please keep it going!

I tend to get emails like this on a weekly basis, so I figured it'd be a good idea to post my response here so everyone can see it.

First: it's awesome that you want to get into game development. Be sure to let us know when you've made something and we'll be happy to take a look at it!

Next, to answer your question: there are a few places that teach specific game development courses. Depending on your time/budget/needs, you might want either a college or a university. Currently, Wits and UCT offer the only degrees in game development (that's the programming stuff) and/or design (the more artistic side of game creation) that I'm aware of. In terms of colleges, there's our pals at Learn 3D with their one-year course in Jo'burg, and Friends of Design in Cape Town – both of which teach Unity as part of their courses.

Good luck! Ed.

FROM: Damon Tomlinson
SUBJECT: Help...
Hey NAGers, (is that a real thing, or did I make that up? Hmmm..) I've just got a PS4 (whoop whoop) and I was wondering what games you could recommend me to get, but like the older games which aren't so expensive, lol.... Thanks okes.

P.S: I'm sort of a new NAG reader.... I love your work, keep it up :)

You won't find a lot of older games for the PS4, since it's still a relatively new platform, but if you're broke (probably after buying that PS4), then I'd recommend that you hit up the previously owned section of any BT Games or other retail store to see what they've got. Or trade with your friends. If you have no money, then offer them your services as a personal slave for a short duration until they feel a fair trade has been made. On the other hand, if you have neither friends nor money, then I suggest you offer your slave services to random strangers on the street. They love that. Ed.

FROM: Phillip Barnard
SUBJECT: Innovation!
Hey hey! I've noticed a "trend" among game devs the past year. HD remakes. Do we want them? A little. Devs are

ON THE FORUMS

You may say that I'm a dreamer, but I'm not the only one who thinks the NAG forums are still the best place to chat about games with like-minded people. Did that sound like a sales pitch? How about "eh, we're a decent enough lot that you might want to stick around"? Either way, join us at **www.nag.co.za/forums/**

Q Do you take "gaming holidays"?

"2/3 times a year, its usually happens when its 4 in the morning and I'm screaming at the TV/monitor. I pull myself aside and think about my life and realise I need a break." **- Tarisma**

"I lose interest in a game and pause for anything between a few days to a few weeks. I then return with will and play on. I'm on one as we speak." **- Toxxyc**

I have found that there is just too much to do in life to dedicate too much time to just playing games. So I take breaks all the time. They aren't really planned breaks though so they vary in length from a couple days to several weeks. **- nukehead**

becoming lazy and unimaginative. Where are my innovative games? Original games? I don't want these remakes, I've played them, I loved them, but now I'm ready for something new. Something grand! Now that next-gen has been current-gen for more than a year, I'd like to see what these bad boys can do! And I don't mean graphic-wise. There are plenty of gorgeous games, but they're just plain dull (The Order: 1886, for example). I'm tired of seeing the same old tricks, and if I see another game using a "special vision" I'm going to cut myself.... A piece of cake. Anyways, thanks for putting up with my rant! Love that you guys brought the poster back!

"Do we want them? A Little" – you've got it right there. I also enjoy some remakes (heck, I called the Last of Us *PS4 re-release my game of the year for 2014), but it's true that this generation feels very slow to take off. There's something decidedly sloth-like about where the industry is right now, and I think everyone is feeling it – publishers and developers included.*

Thanks, glad you're enjoying the posters, and save some of that cake for us! Ed.

FROM: Danie Wolmarans
SUBJECT: Lag
I need help.We all love multiplayer games,but get so frustrated because of the devil himself LAG.I ask of you to give us all some advice on how to counter lag and get a good ping connection.I have tried all the suggestions from youtube,none of them work,please help,Im going to smash my XBOX to bits.

P.S Do you believe Naughty Dog will make a Uncharted Trilogy for Ps4 and plese give us some more news about virtual headsets,would love to know more.

There are two ways to avoid excessive lag while playing online games: play on local servers, or move to the country in which you wish to play. There's nothing that can be done to combat lag when you're playing from the tip of Africa and connecting to European or US servers. Data signals take time to be transmitted, and honestly it's a wonder that some of these games are playable at all. Netcode these days is tight.

If you're already playing against locals, then it's probably your own Internet or local connection that's at fault. Avoid Wi-Fi, make sure you've got a decent cable and router,

Fan art

This is the best bit of fan created artwork we received at NAG this month. If you insert, use or create a piece of gaming artwork incorporating the NAG logo you might also end up here for your three lines of fame. Just don't go and stick the NAG logo on a picture and send it in because that is dumb and dumb people don't win things.

TARIQ CASOOJEE, "My rendition of Thief. Hand drawn for your pleasure. Oh and Extraordinary Mag! (emphasis needed). You're Welcome."

This month's prize courtesy of Prima Interactive is *UFC* for Xbox One.

THE SHORTS

"tell IGN Africa to make more podcasts, love the conversations"
- *Danie Wolmarans*

"Now let me stop before this letter gets even more overlong, overdramatic and blah blah blah..."
- *Justin Van Huyssteen*

"Stop ruining the gaming industry for everyone in it and people who would like to go into it!"
- *Tristan Jacobs*

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or shout at your ISP if things aren't doing what they're supposed to. Or don't shout, you know. Be nice to them. Heck, be nice to everyone, especially those poor souls online who are coping with having your lagging ass on their team. Ed.

FROM: Andrey Omeltchenko
SUBJECT: The future of consoles?
A semi-profound idea recently crossed my mind while I was trying hard not to get destroyed by a merciless Mage in Hearthstone: what's the future of gaming? Not gaming in general, I mean console gaming. Yes, it will still be a while until consoles die out... Or is it? The latest generation of console giants were released not long ago and are successfully selling around the world by the thousand, but how long will it be till Microsoft and Sony run out of ideas? Or until consoles evolve into a completely different beast that will be classified as something new? Will they just become so compact that they will be called portable? Will the PC take over? (Gasp!) For now though gaming seems to be going strong with the possibility of owning a VR headset for your PS4 on the horizon (Come on Microsoft!) and just the general progression of game quality, when they're actually finished in time for their release date and don't need massive updates to hide the matrix code popping up during your game. Well

anyway, there's my thoughts on that, oh and by the way, great magazine, love all the NAG writers different points of view. Don't stop being awesome! P.S. I'm not sure if it was just my April Nag, but the Roxy 2015 poster wasn't on the middle pages, so I couldn't add it to its brethren on my wall. Probably a printing error...right?

This might be a less-than-popular opinion, but I'll be very happy when all of this console vs. PC nonsense ceases to exist because the very topic of discussion is no longer a thing. PCs will always stick around because we need them to create content, but really the only thing separating a PC and a console these days is an operating system. One is designed to do a specific thing (play games), while the other can do a bunch of things (like typing these words).
Soon enough it won't matter what you call your gaming machine because they'll all be the same thing. I predict a future where every house has a single, central computer connected to a collection of dumb terminals: one in your living room, acting as a "console", another in your study, one in your hands and another that you take with you to work or school. Private cloud-based service of everything from games to spreadsheets to email. Give it a decade.
PS: If by "printing error" you mean "a very tired and over-worked Savage screwed up", then yeah – that's what happened! Ed.

ON TWITTER
@nagcoza

JRF
After reading @nagcoza for over 15 years, I decided to take a sabbatical. This month's mag taunted me every time I went to the shop. I gave in.

Nadine
Give me candy and the @nagcoza and I will love you until next month.

JS in SA Conference
Big thanks to @nagcoza for joining us as a sponsor this year!

Z!¥@@d
@nagcoza im lovin the new design of the mag!

Dominic
@nagcoza #theorder1886 I think your score of 62 for the order is madness, I feel the game is quality not quantity. @TheOrder1886

Lloyd Mackenzie
Thanks @nagcoza for my awesome prize! Just in time for the weekend.

Local game developement

home_coded

EXPOSURE FOR SOUTH AFRICAN INDIE DEVELOPERS

BY RODAIN JOUBERT

When Rodain isn't writing about game development, he's *doing* it. With years of experience in the local community and the critically acclaimed *Desktop Dungeons* under his belt, he's at least 50% confident that he's not talking entirely out of his ass.

GAME DEVS!
MEET YOUR MAKERS!

It's easy to assume that game development in South Africa is a small, isolated community. For most of its history, it kinda has been. But recent growth and connection with other societies and interest groups has been a fantastic indicator of healthy, locally-focused expansion and co-operation (which, I'm inclined to believe, is a Really Nice Thing).

There's always been a few links, of course. Quite a lot of South African dev studios hail from animation companies and the like – there's a lot of skill overlap and lower studio mortality.

Nowadays, though, we also see connections come to life in more surprising areas. Electronics, gadgetry, peripherals, printing, and other technological expressions of creativity are a reality in our part of the world – and becoming more popular due to the interest and effort from the local community of "makers".

Like game development, these niche tech interests have had a South African following for quite some time – although it was a lot more difficult five to ten years ago. This was often a matter of availability: the easiest example to think of is 3D printing, which was only last decade limited to expensive art jewellery and lab setups at one or two lucky universities.

When the technology became simple and cheap enough to use in a more "indie" sense, South Africans began seeing an explosion of local experiments. Nowadays, we have lawnmowers printed in garages and design companies offering to scan and recreate your face at local expos for a fraction of the time and cost that these older projects involved.

That's just one avenue of creative thinking. Arduino enthusiasts are thriving, too. And there's augmented reality projects, drones, home-made hacks, re-appropriated technologies … chances are you've seen or read about at least a few of these exotic endeavours made by our fabulous home-grown tinkers. If you're a maker yourself, you're probably very well-acquainted with them.

So, while local game developers are generally driven by software (joined by an ever-more-convincing board games contingent), the community has recently expanded to incorporate the perks of these makers. Why? Because the whole is greater than the sum of its parts.

One of the most interesting aspects of South Africa's game development "personality" is that it's not just a carbon-copy of the global industry made smaller. To survive and grow, it pays careful attention to what's currently trending, but also what's not. By experimenting with new techniques and covering strange territories, South Africans use good practice as a yardstick to nonetheless try riskier ideas with potentially high payoffs (this is the mindset which gave birth to successful initiatives like the Super Friendship Arcade and the experimental hardware game jams). If you don't know how to wire up a custom controller, though, you'll always be limited to relatively low-risk and unadventurous media.

Similarly, while many talented hackers

" When the technology became simple and cheap enough to use in a more "indie" sense, South Africans began seeing an explosion of local experiments."

HOW DO I MAKE STUFF / DO THE THINGS?

One of the main barriers of entry for getting involved with maker projects is their exoticism. Or rather, their perceived exoticism. All of those electronics and tools and flashing lights and robot fluid sensors can seem really intimidating from the outside, but there's enough standardisation and workshops out there to give you a port in the storm and learn how things really work.

Best of all, if you're already a game designer and are just looking for something new to expand into, you don't even have to do all of the crazy stuff yourself! Existing makers are itching to co-operate, teach and learn, so never fear – just hop aboard with one of these groups and find out just how much power you have.

MAKE GAMES SA

www.makegamessa.com

Though not a "maker" community itself (in the sense understood here), MGSA has recently been involved in broader co-operation with hackers and other creatives. If you need information on workshops or links to the occasional event, stop on by – especially if you prefer to approach things from the game dev perspective.

MODERN ALCHEMISTS

www.modernalchemists.co.za

A relatively new group, but focused on building bridges between interest groups and niche disciplines to form a larger, stronger identity. Weekly hangouts take place in Cape Town, hosting the occasional game developer swarm. Go here if you want to learn more about makers in your area.

THE MAKER SPACE

www.themakerspace.co.za

This Durban-based group runs regular workshops on all kinds of geeky DIY – craft, Arduino, textiles and so on. The website itself is also good for links to resources, how-tos and community involvement.

WERK_

www.facebook.com/thewerk

A new maker's space based in Port Elizabeth, running workshops and testing the waters for further community development.

HOUSE 4 HACK

www.house4hack.co.za

This is an incubator based in Centurion, providing facilities, workshops and a whole lot of space for creativity. There are plans to expand operations to provide business mentorship and startup finance.

and makers exist in South Africa right now, only a subset of them have the skills, resources and motivation to pull together something as specific as a game project.

Combining these talent pools isn't just a possibility – it actually makes sense if South Africans want to pursue opportunities that neither group can do as effectively while flying solo.

Last year, one notable instance of inter-discipline fusion was the welcoming of overseas developers to the A MAZE festival in Johannesburg, which included a "first world" taste of exotic interaction methods and technologies. Button-suits attached to bodies and games controlled via keyboard smashing (or just plain screaming!) were a norm. The custom controller workshop was well-populated. Excited ideas were swapped between overseas visitors and established local makers, while bold conversations and remarkable demonstrations made fresh converts out of others. Active manifestations of hardware game design were abundant, sheltered in improvised cardboard chassis, LEDs and constructs less describable.

But this paradigm has already moved beyond flash-in-the-pan presences at expos. For example, there's co-operation between developers in Cape Town and a group known as the Modern Alchemists: makers, hackers and people who like creating "cool interactive devices". The creator of this group, Robyn Farah, said that it emerged as a result of a clear need for collaboration within her Arduino Cape Town community. Creative people like hackers tend to have a range of interests, and establishing links with other designers, coders and artists makes a great deal of sense. "Interdisciplinary jams" have already sprung into existence, and gaming meetups have been held at maker venues.

This is not to say that co-operation, line-straddling and creative tech haven't existed in local game development already – but, as with board gaming, the move to legitimise and recognise those links has seen a massive boost recently, approaching the point where brand new groups of people can look up, take notice and realise that South African game creation has something to offer them after all.

Interested in the opportunity? Want to learn more? Investigate the box-out for a few suggestions of where to look and learn. **NAG**

Bytes

Travis Bulford is a coffee crazed game developer who's been hacking away since the early 1990s. Most notably he founded Celestial Games and released *Toxic Bunny* in 1996. He is now VERY busy working on rebuilding Celestial Games and setting a few coffee drinking world records (not necessarily in that order).

GUEST COLUMN

BY TRAVIS BULFORD

THE ART OF HINDSIGHT AND THE SCIENCE OF THE PAST

It's not often I talk about things of a personal nature, but I have been convinced this is something worth sharing. So get some coffee… Right, got that? Good. Let's have a chat about things now past. In particular about how to evaluate a successful moment. For me I am talking about our 1996 success with *Toxic Bunny*. Firstly let me put a few mistaken ideas to rest. *Toxic Bunny* was not successful because it was local. On the contrary, local things in South Africa back in 1996 were spurned and immediately considered inferior. We moved over 150,000 units in France, Poland, Netherlands and the UK. We sat at the number one spot at Software Connection for the six weeks through Christmas into the new year here locally. This by today's standards would still be a considerable success, but by 1996 standards it was a phenomenal success. It was a success that I consider myself lucky to have been a part of.

Here is the problem that a success like this presents: how to apply the scientific method to it to evaluate what you did right and what you did wrong. Well to be fair, I was 23 – I "knew" then and there that we had of course done everything right and we had done nothing wrong. It was the only way I could evaluate the situation. Time and further successes and failures have taught me many things; first is that it's great to be lucky but it's even better to realise you were lucky. Since then I have had many other successes and failures and from those I have been able to pick out the things that I now think made the biggest difference to us when we released *Toxic Bunny*.

The one thing we did right was picking a concept and theme that was globally topical. That is toxic waste. Back in the late '80s and '90s everything was about toxic waste and atomic fallout. A prominent example would be *Teenage Mutant Ninja Turtles* (1987). Other less known ones are *Mutant League* (1994), and *Toxic Crusaders* (1990). But it doesn't stop there. The world was obsessed with atomic waste and the fantastic ideas of what could happen were visible in horror films and various forms. We were so obsessed with it ourselves that we instinctively called on it and engaged with it. The thing is, it was instinct not forethought. That makes it a spot of luck right there. So today when we evaluate an idea we look at how it will resonate with society's current focus. Will the idea resonate with people, will they care? Obviously we want to tell stories we love, but we also want someone to care about them too.

The next thing that went right was we were surrounded by people that shared our vision and believed in us. This was not as a matter of planning, it was simply that our focus, determination and passion was infectious (and who doesn't love a group of crazy coffee addled youngsters?). People saw what were were doing and gladly got involved in making things happen for us. I personally regret not realising how big a role that played in our success at the time. Making games then was far more technically challenging than it is today and while we remained focused on our game the people around us just picked up the pieces we didn't consider important. Those pieces played a huge role in lifting the game off the ground here in South Africa and giving it a platform internationally. The people that silently became part of our team contributed in ways we simply didn't understand.

I might berate myself now for not seeing all these things when we first released our game, but as I said earlier I don't know if we could have. With just one example you're only left with your assumptions. It takes several examples build correlations.

My closing advice to you is this: dare to dream big, aim for the stars. Remember that success and failure are both learning opportunities. Don't let either go to waste. **NAG**

> *"The one thing we did right was picking a concept and theme that was globally topical."*

Wave 4 of amiibo figurines hits 29 May

Pre-orders crash online American retailers

Nintendo has announced the line-up of amiibo characters arriving in the fourth wave of the money-printing figurines. The NFC-enabled collectibles being added to the *Super Smash Bros*. line-up for the Wii U and 3DS include: Charizard, Greninja, Jigglypuff, Lucina, Ness, Pac-Man, Robin, and Wario. Nintendo pointed out that Ness will be a retailer exclusive in the US, but fret not because local online retailers are already listing it for pre-order.

A further *Super Smash Bros*. amiibo release will happen in July with Dark Pit and Palutena being added; Bowser Jr., Dr. Mario, Ganondorf, Olimar, and Zero Suit Samus will be added in September.

But it's not only *Super Smash Bros*. getting amiibo attention: *Splatoon* will get its own set of amiibo on 29 May as well. Launching on the same day as the game, you'll be able to pick up the Inkling Boy, Inkling Girl, and Inkling Squid. A triple pack with all three amiibo in it will be made available, or you can opt to pick up the boy and girl Inklings individually.

If all of that still doesn't tickle your amiibone (ugh, that was *terrible*) then perhaps a *Yoshi's Woolly World* amiibo will? The best bit about this new Yoshi amiibo is that it's made out of wool. There will be three colour variants of the yarn-flavoured Yoshi: the classic green colour, and then pink or blue options. Tapping one of these woollen Yoshi amiibo onto the Wii U's NFC area will give you a second Yoshi to use in *Yoshi's Woolly World*. Two Yoshis are always better than one as you'll be able to fling your second Yoshi to inaccessible areas or at in-game enemies.

The demand for Nintendo's amiibo figurines has become so massive that online retailer giant GameStop's servers crashed the moment this fourth wave went up for pre-order.

Bytes

Miklós once at an entire wheel of cheese without telling anyone. He began in the morning with good intentions and a box of crackers, but by the end, there was nothing good left in him. Only cheese.

PIXEL FIX

BY MIKLÓS SZECSEI

DEATH BY COLLECTIBLES AVALANCHE

I'm 32, and last week I bought a LEGO set. I "bought it for my son", which is an excuse that I've been looking forward to using ever since my wife got pregnant. It's also useful being able to sidestep the first-person pronoun "I" when I talk about LEGO: "We now have three LEGO Millennium Falcons in our collection." And by "we" I mean my son and me but really just me. Of course he is going to want to play with all this LEGO at some point, which is completely fine: LEGO is there to be played with and I haven't quite turned into President Business just yet.

Being a little geeky has its uses: it allows you to collect all manner of things, or buy toys aimed at ages 8-12 without your friends or family thinking you're weird. You're just geeky, and being geeky is cool nowadays. My brother-in-law and I just spent the last 20 minutes or so browsing the website brickinstructions.com, which I think has the instructions for nearly every LEGO set made since 1965. We were finding the instructions to sets we'd had while growing up; it turns out that our childhood LEGO tastes had been very similar: Castle, Pirate, and Space LEGO. One of the big differences between our LEGO collections is that I still have mine… disassembled and with each set individually packed into bags and stored in one giant cardboard box complete with alphabetised filing of all the instruction sheets. I'll admit that I am perhaps a little OCD when it comes to certain things. As for my brother-in-law's collection, he has no clue what happened to it. He is very much "grown up" and stuffing shelves with nerdy collectibles or buying *Star Wars* LEGO "for my kid" is not something that happens in his life. I guess I just didn't "grow up", or at least I got far enough into adulthood to realise that it's actually a little shit, and that hanging onto a shred of childhood is probably wise if I hoped to stay sane.

I really hope I never turn into President Business. In other words, and for those of you missing the glaring *LEGO Movie* reference: I hope my adult life doesn't become so overbearing that I'm forced to "grow up" entirely. Self-identifying as a geek has provided me with the perfect "excuse" to buy childish things well into my adult life. Video game figurines, zergling and *Half-Life* headcrab plushies, *Minecraft* LEGO… I have loads of the stuff adorning custom shelving in my office at home, and now that my son is showing an interest in *Skylanders*, it doesn't look like the collecting is going to slow down any time soon. Plus, I mean, have you *seen* that yarn Yoshi amiibo for *Yoshi's Woolly World*? I need to have that in my life but I know that if I get just one amiibo, then some inescapable collecting bug will bite and I'll have to put up a new shelf. Send help. **NAG**

> "They were really kicking us. We have a paid, ad-free version of Sumico. Almost nobody buys that, and they hate the ads. The users just don't care if the developer makes money."
>
> *- Matthijs Dierckx, co-creator of mobile game Sumico, speaking with GamesIndustry.biz and lamenting the attitude of many mobile users*

ToeJam and Earl are making a comeback

Retro fans have reason to rejoice! The original creators of the cult classic *ToeJam & Earl* are finally releasing a new game in the much-loved franchise, thanks to more than 7,000 backers who managed to raise over $400,000 towards their Kickstarter campaign.

The new game, entitled *ToeJam & Earl: Back in the Groove*, will be released on Linux, Mac and Windows PC, though a definite launch date has yet to be set. If the campaign's stretch goals are met, the development studio HumaNature will also produce console ports.

The game is set to play much like the original 16-bit incarnation, with elements borrowed from the sequel called *Panic on Funkotron*. Preliminary designs also show it to feature an edgy, cartoon look.

The Talos Principle expansion coming up

As was foretold

The Talos Principle, Croteam's surprisingly philosophical first-person puzzle game, is now set to get a rather large expansion pack later this year. *The Talos Principle: Road to Gehenna* follows the original game's heavily Biblical theme by featuring a new android named Uriel, who is Elohim's messenger. It's up to Uriel to explore a "strange, hidden part of the simulation on a mission of mercy and redemption in an attempt to free the souls of the damned at all costs", publisher Devolver Digital was quoted as saying.

The expansion will include no less than four episodes with tons of new puzzles, new gimmicks and even some new NPCs.

"We wanted to revisit the world of *The Talos Principle* and deliver new characters and a new world with its own history and culture", said Tom Jubert, the co-writer for the original game. "With *Road to Gehenna* we have created an all-new narrative which both branches off from and expands the original character's journey."

The Talos Principle and its expansion will also be available for the PS4 around the same time, which would be this spring for us living south of the equator.

"It's even more important for us to consider how we can get as many people around the world as possible to play Nintendo smart device apps, rather than to consider which payment system will earn the most money."
- Satoru Iwata on Nintendo's jump to phones and tablets

By day a TV producer, by night a mom, a gamer, and a writer. In fact she does too many damn things for her own good.

THE GAME STALKER

BY PIPPA TSHABALALA

FAMILY TIME

My eldest son has become a gamer. A fully fledged gamer. For realsies. And I'm so proud. But I'm also a little scared.

He's four, and as he gets up in the morning for pre-school he asks me, "Mommy, can I play *Skylanders?*" On one hand it's awesome that the bug has finally bitten him in a serious way, but on the other hand I'm already having the limiting screen time fight with him. Things that I don't think our parents ever really thought about because gaming was still relatively new and there were no studies on the impact of screen time on children, are things I now have to consider.

I feel like a bit of a hypocrite as well because when I tell him that I think it's time to stop playing and have a little break and he gets upset I don't really have a leg to stand on as I would have reacted in exactly the same way. The only reason I don't spend long hours playing games now has less to do with whether or not I want to and more to do with the fact that I have work and then kids to look after. It's difficult to fit in gaming time when you work a full day, then come home and cook and then put the kids to bed (my eldest is at that age that only Mommy can put him to bed, not Daddy). By the time that's all done if I want to spend any time with my husband, then gaming is not the ideal activity since most of what I enjoy playing is not multiplayer. Sure he wouldn't begrudge me that time, but I do actually want to have a relationship at the end of the day, so all in moderation.

In my son's case, the game in question is *Skylanders: Trap Team*, which means that not only can he replay the same levels again and again but he can collect all the millions of figurines, which was very useful for his birthday. I can see his fine motor coordination skills improving as he goes from not being able to jump forward, to doing timed jumps on moving platforms in the space of a couple of days. And solving puzzles. And beating the bad guys without my help. Really. I'm very impressed with that actually – he's using multiple combo attacks and although he does still button bash a little, he still knows exactly which buttons he's pushing (as he tells me which weapon is necessary to beat a certain boss).

"No darling, it isn't good to just spend all day in front of the TV playing games" sounds ridiculous coming from a person like me. How do I explain to my four year old that it's fine to spend a few hours playing a game, but at some point you have to take a break, get up, walk around, talk to people.

And honestly? Give someone else a damn turn! **NAG**

Kojima is leaving Konami

Or is he?

There's been a great deal of confusion and speculation surrounding a recent controversy at Konami, but it seems that industry veteran Hideo Kojima may leave the studio.

The issues started in mid-March when all mention of Kojima's name was stripped from Konami websites and promotional material for the upcoming *Metal Gear Solid V: The Phantom Pain*, as well as older *MGS* games. Konami then rebranded Kojima Productions to Konami Digital Entertainment.

The matter became cloudier when anonymous sources (keep your pinch of salt handy) reported that Kojima will leave Konami after *MGS V*. The source said, "after we finish *MGSV*, Mr. Kojima and upper management will leave Konami. They said their contract ends in December."

Konami's official response to those rumblings was just "Please look forward to future announcements". Later in March, they took to Twitter to say "The name and organisation has changed, but as before, *MGSV: TPP* is continuing as a work from director Kojima and the existing team members." Konami stated that the name changes were part of an effort to re-emphasise the company and "to move into the corporate headquarters structure".

So what does this all mean? As of now, it's difficult to be sure. Kojima and other members of his team have remained tight-lipped about their job status, and Konami is also skirting that same issue. It also hasn't been mentioned how this will affect other Kojima projects, such as *Silent Hills*. However, one thing that has remained abundantly clear throughout the controversy is that *Metal Gear Solid V: The Phantom Pain* remains in the directorship of Kojima, and is on schedule for a September 1, 2015 release.

Holy Batman-branded-PS4, Batman!

Sony and Warner Bros. Interactive Entertainment have unveiled a super-sexy *Batman: Arkham Knight* branded PlayStation 4 console. The limited edition console will sport a sleek, steel-grey colour scheme with a silhouette of Bats adorning the side of the unit. It also comes with a matching, steel-grey controller and a copy of *Batman: Arkham Knight*. Sony has also revealed that a standard edition PlayStation 4 console and *Arkham Knight* bundle will be made available in time for the game's launch on 23 June.

"Everyone turned down my idea for a pity mode that said 'YOU TRIED' every time you get killed."
- Hidetaka Miyazaki, director of Demon's/Dark Souls and Bloodborne.
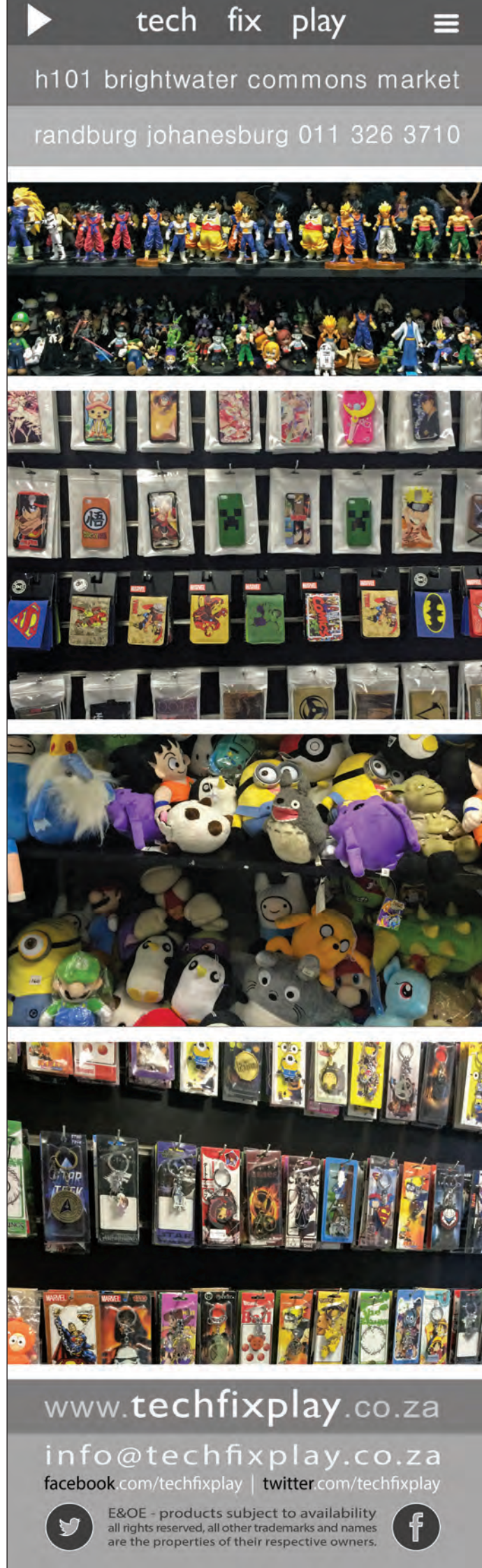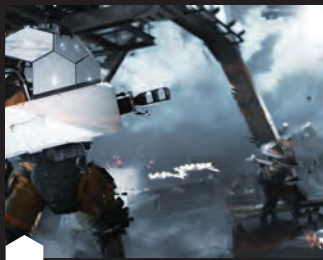
Quantum Break delayed; pushed back to 2016

Remedy Entertainment and publisher Microsoft Studios have delayed the release of Xbox One exclusive *Quantum Break*. Initially due for release in 2015, the game has been pushed back to 2016. Shannon Loftis, head of publishing at Microsoft Studios, basically said that Microsoft's 2015 slate of releases was too crowded, and added that the game's delay would allow them to extend Microsoft's "incredible portfolio into next year with a monster new IP". Sam Lake, creative director at Remedy said that the extra breathing room would allow him and his team "to polish and fine tune the game".

Gabe Newell is a hidden boss fight in Crawl

Developer Powerhoof's dungeon-crawler *Crawl* is getting a Gabe Newell boss encounter. If you have to ask "why?" then there is no hope for you as a human being and you need to sit down and rethink your life. *Crawl*, which is in Early Access on Steam, pits up to four friends in a local multiplayer game. One person controls the hero and the remaining players control the dungeon's monsters and beasties. Except now one of those dungeon denizens will be Gabe Newell, who has been lovingly hand-crafted in glorious, double-knife-wielding, pixelated goodness. Also he pulls a mean Dragon Punch so there's that.

The new Fire Emblem game hits 3DS in 2016

During a Nintendo Direct back in January this year, Nintendo boss Satoru Iwata revealed that a new game in the *Fire Emblem* series was in the works. That was pretty much all they said at the time. Luckily it's now May, so that's given Nintendo a good few months to drum up some more news on the upcoming tactical RPG.

The new *Fire Emblem* (there's still no official subtitle, such as 2012's *Fire Emblem Awakening*) will land on Nintendo 3DS handhelds in 2016. It'll involve two kingdoms at war, and players will have to choose which kingdom they want to be a part of. Picking either kingdom will change the course and story of the game, so there's some definite incentive for more than one playthrough. The kingdom of Hoshido is one that tries to maintain peace; the opposing kingdom of Nohr is out for glory. According to Nintendo, those players wanting a more accessible time with the game will want to choose the kingdom of Hoshido, whereas those players who want a little bit more of a challenge will want to side with Nohr.

Biofeedback game Nevermind in Early Access

We've heard of adaptive AI – games that change according to player styles. This was featured predominantly in the *Left 4 Dead* series. Now an indie studio called Flying Mollusk has created a game called *Nevermind* which responds to devices like heart monitors. It's an abstract, nightmarish experience based on the minds and thoughts of trauma patients.

Basically, the objective is to remain calm. The more a player panics, the tougher the game becomes.

The developers are currently testing player feedback and hope to increase the amount of game levels. It's currently available to purchase for $24.99 (R300).

Life after Unity

See the world with Assassin's Creed Chronicles

Ubisoft has announced that the *Assassin's Creed Chronicles* saga won't end with *Assassin's Creed Chronicles: China*, the downloadable 2.5D side-scrolling stealth/action game that expands on the AC universe. Two more *Chronicles* games have been revealed – one set in Russia, the other in India. In case you're fuzzy on the details, *ACC: China* stars Shao Jun, the last remaining assassin of the Chinese Brotherhood, and is set in the year 1526, during the early days of the fall of the Ming Dynasty. Ordinarily it costs $9.99, but is free to owners of the *AC Unity* season pass.

ACC: Russia and *India* don't have a release date at the time of this writing, but we do know that they'll place players in the assassin-shoes of Nikolaï Orelov and Arbaaz Mir respectively, both of whom have appeared in *Assassin's Creed* graphic novels. Arbaaz's story takes place in India in 1841, when the Sikh Empire is embroiled in a war. Nikolaï's is set in the aftermath of Russia's October Revolution, in the year 1918.

Each of the games in the *Chronicles* series features its own gorgeous painterly art style that complements their respective settings. As mentioned above, you can buy *ACC: China* right now on PC, PS4 and XBO, and you can expect *Russia* and *India* to arrive on those same platforms sometime in the future.

Bytes

Open source VR in schools

Razer has added nearly 30 institutions to its OSVR Academia program, which seeks to provide hardware kits and fund research for VR development.

The partners include universities and institutions primarily in the United States, but schools in Canada, Austria, Spain, Italy and the UK are also featured.

The goal of the initiative is comparable to similar movements such as the Open Handset Alliance. They aim to provide openness, accessibility and inter-compatibility with devices in the emerging VR market.


First details of Nintendo's upcoming system

Much like humanity's first warp five starship in *Star Trek: Enterprise*, the next Nintendo console is codenamed NX. This was confirmed by Satoru Iwata, the chief executive of the company.

Iwata described the embryonic system as "a brand new concept" but declined to elaborate further. Notably, this has come after Nintendo's announcement that they will bring their IPs to the mobile market.

"It is too early to elaborate on the details of this project, but we hope to share more information with you next year," Iwata said.
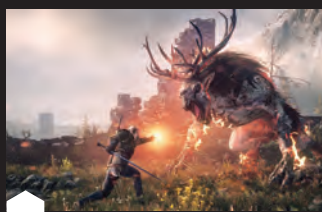
Got 200 hours of your life to spare? Then The Witcher 3 could be for you

If you thought *Dragon Age: Inquisition* was reason enough to forget about having a life, you ain't seen nothing yet. Responding to a tweet concerning *The Witcher 3*'s length, senior designer Damien Monnier responded that the game will total around 200 hours, if you include all side-quests and challenges.

This is in stark contrast to a previous statement from CD Projekt Red which put the game's length at about 100 hours. This was back in March 2013, when the game was still slated for a 2014 release. Suffice to say, we'll have lots to see and do here.

Hand-made humans

New Deus Ex announced, promises tons of awesome

We loved *Deus Ex: Human Revolution*, so naturally we're over the moon at news that its long-rumoured sequel has finally been revealed. It's called *Mankind Divided*, it's set two years after the end of *DE: HR* and it once again casts players as gravelly-voiced cyborg guy Adam Jensen. At the start of the story, Adam's working for Interpol hunting down augmented terrorists. Humanity's still divided on the concept of post-human augmentations, and various extremist factions have sprung up with the goal of violently delivering their message.

It'll once again be a first-person stealth/action game with third-person elements. Expect to see new augmentations, weapons (and these appear to be highly customisable), items and abilities in your quest to save (or maybe destroy) the world. Side quests promise to be more meaningful, offering a chance to further explore the narrative's complex themes rather than just spewing out fetch quests. You'll once again have full control over how to approach situations: you can use stealth, all-out aggression or other, more creative tactics to overcome obstacles.

Boss battles will apparently be far more nuanced, offering greater variety in how to approach them other than simply "shoot them in the face until they're dead". Enemies will be more diverse, sporting a wider range of augmentations and tactics that'll keep things interesting, and there'll be a number of different environments to explore. The story of *Mankind Divided* is leading up to the events of the original *Deus Ex*, and it uses elements from all of *Human Revolution*'s endings to lay the foundation for its narrative. It'll be made available on PC, PS4 and XBO.

The Witcher 3 all set for paid expansions

CD Projekt RED has always aimed to support and expand *The Witcher 3: Wild Hunt* with heaps of free downloadable content following its launch, but the developer has now confirmed that it'll also release at least two paid expansions that'll bolster the already huge RPG with fresh content. They've assured players that these expansions will offer excellent value for money:

"We remember the time when add-on disks truly expanded games by delivering meaningful content. As gamers, we'd like to bring that back. We've said in the past that if we ever decide to release paid content, it will be vast in size and represent real value for the money. Both our expansions offer more hours of gameplay than quite a few standalone games out there."

The first one is titled *Hearts of Stone* and is due this October. *Blood and Wine* is due in 2016 and will add

an entirely new region which features "an atmosphere of carefree indulgence and knightly ritual [which] masks an ancient, bloody secret". Both expansions will be available via a single "Expansion Pass" that'll cost around R200.

Frontier's Elite: Dangerous hits Steam

Frontier Developments has finally added the ginormous *Elite: Dangerous* space simulator to Steam. Up until now the game has only been available via the developer's own online store. Those of you who strive to keep your PC gaming in one launcher will now be able to maintain equilibrium; we can hear all of you OCD-types sighing with relief.

The Steam version of the game is identical to the original version, which means that those playing via the Steam client will be able to play with friends who aren't running the Steam version. What's more, Steam players will get access to the Mac version of the game when that eventually releases.

Frontier has said that there is currently no way to activate a Steam version for those who have already purchased the game via Frontier's store. They are, however, looking into that. In the meantime you can always add a non-Steam game to your Steam library if you want the Steam overlay enabled while you space-truck commodities across the galaxy.

Just last month Frontier Developments revealed that *Elite: Dangerous* would be heading to consoles as well, with the game being a timed exclusive for the Xbox One.

Zelda for Wii U delayed

The hotly anticipated Wii U *Legend of Zelda* has slipped from its 2015 launch window, as announced by producer Eiji Aonuma. In a recent video, Aonuma said of the development that "new ideas have continued to spring forth, and now it feels like we have the potential to create something that exceeds my own expectations".

He went on to elaborate on the shift in scope of the development, saying: "I feel strongly that our focus should be to bring all these ideas to life in a way that will make *Zelda* for Wii U the best game it can possibly be. Our priority is to make the ultimate and most complete *Zelda* game." Nintendo further went on to elaborate that *Zelda* will not be present at E3 2015.

While the news is disappointing, it is hopefully a good sign that a great deal of effort is being paid towards developing the new *Zelda*.

Attack on Titan coming West

Fans of the smash-hit anime series *Attack on Titan* will finally be able to play the 2013 3DS adaptation without needing to import it. Or learn Japanese.

Subtitled *Humanity in Chains*, the game will feature the series' original Japanese audio with English subtitles and updated controls allowing the New 3DS's C-stick to control the camera. The local and online co-op is being retained, and the bombastic soundtrack is a near certainty.

The game is slated for launch sometime this May on the Nintendo eShop.

Project CARS gets free DLC

Enjoy racing? Enjoy free DLC? Wish you could have both? Well…

Slightly Mad Studios, the developers of upcoming racing-sim *Project CARS*, have announced a series of free downloadable cars to be made available for the game after launch, beginning with the Lykan HyperSport. Creative director Andy Tudor said this "represents the first of a series of free cars we'll be giving away every month as a thank you to our fans for being so patient for the launch of the game".

The game is scheduled to launch this May on PS4, XBO and PC, with Wii U later on.

Halo 5: Guardians gets release date

The much-anticipated Xbox One exclusive *Halo 5: Guardians* will be tea-bagging its way onto shelves October 27th, 2015. The news was announced through two very slick live-action trailers. Each trailer is shown from the perspective of one of the main characters, Master Chief and Jameson Locke, walking through battle-ravaged ruins while verbally confronting the other. The trailers raise very interesting points about the story possibilities for the game, and how two different protagonists will approach things.

In related news, the size of the recent *Halo 5* beta was 10.27GB. Coincidence? Probably.

Bytes

That's no house sound

Abstention is a survival horror game set in a single location: a beautiful lake house that slowly changes with the passage of in-game time. You're caught in a *Groundhog Day*-style loop, wherein you'll be attempting to survive a single, repeating night in the house, discovering more of its secrets with each play in the hopes of avoiding fatal mistakes that'll send you back to the start.

The game will be augmented by randomised elements, changing the location of objects and the features of rooms with each new playthrough. A single intelligent enemy will stalk you as you attempt to unravel the narrative, and the developers cite inspiration from games and films like "*Silent Hill*, *Alien*, *Resident Evil*, *Eternal Darkness*, and Kubrick's *The Shining*".

Feast your brain on fresh Terraria: Otherworld info

Now that the dust has settled following the excitement around the reveal of Terraria: Otherworld (which isn't a sequel, but is described as an "offshoot" of the original), we've now got some concrete details on what to expect from it. Set in an alternate *Terraria* dimension, it'll be built around a core storyline that players can freely engage with as and when they choose.

Progressing through the story will require that you find and activate Purifying Towers, which act as a defence against the Corruption afflicting the game's world. These towers attract enemies, so you'll have to construct customisable Wartowers to protect them – meaning the game will feature elements of tower defence. NPCs in the game will have distinct personalities and stories, which will be randomised with each playthrough. Skill trees will exist, with items and skills improving as you use them.

Lakeview Cabin Collection is like a sandbox slasher film with weaponised dogs

I f that headline didn't grab your attention, you are *soulless*. Anybody who's *ever* seen a horror movie has wondered what they'd do were they faced with the horrific scenarios depicted on screen, and the *Lakeview Cabin Collection* is perhaps the perfect way to play out your horror-flick inspired survival fantasies. In essence, the game is a side-scrolling sandbox survival horror that hands you a bunch of toys (like shotguns, wood chippers, rakes, lanterns, ziplines, bongs and alcohol) and tasks you with surviving any way you can when things that want to murder you come a-knocking.

As the title implies, *Lakeview Cabin Collection* won't be just one story, but a collection of them divided into four playable episodes. Each one will see four friends attempting to survive a different scenario. The first one is out right now and is centred on a summer camp setting, wherein you're free to party hard while fighting for your life. Or you could just murder everyone yourself. It's your choice. You can get your hands on the collection right now for around R100 via Steam, Humble Store or itch.io.

SUPPORT LINES

Got a legal boxed game and need some technical help? Before you call please do the following. Update your system software, drivers and have a look online for a game patch. Just these simple tasks eliminate 93% of all problems – it's a made up statistic but probably close enough..

Publishers / Activision / Blizzard 2K Games Rockstar / Ubisoft / Codemasters / NC-Soft / Namco-Bandai / Disney
e-mail / support@xtremems.co.za
Telephone / 0861 987 363

Publishers / Microsoft Xbox
Telephone / 0800 991 550

Publishers / Electronic Arts
e-mail / zasupport@ea.com
Telephone / 0860 EAHELP/324357

Roxy hunt

Send your retro Roxy sighting to **letters@nag.co.za** with the subject line "**May Roxy**", and of course your contact details, and you could win a prize. To infinity!

April winner

Andrew Boyley , page 6

This month's prize

Marvel Dice Masters, sponsored by Skycastle Games

SKYCASTLE

Marvel cancels 33 comic series

In preparation for their upcoming *Secret Wars* arc, Marvel Comics has cleaned house and scheduled 33 comic series to be cancelled. This is all part of the grand scheme of ending the Marvel Comic Universe as we know it, and introducing the *Secret Wars* universe. In an interview with Gabriel Winger, Marvel's senior vice president of sales and marketing (now there's a big title), it was confirmed that the individual comic book creative teams were being allowed to end their series in ways they saw fit. Winger said, "We let them tell 'Last Days' stories if they wanted to; we let them tell 'Secret Wars' stories if they wanted to. So in the end *Secret Wars* truly has been a creative driven process."

Some of the comics include *Amazing Spider-Man*, *Amazing X-Men*, *Avengers*, *Fantastic Four*, *Guardians of the Galaxy*, *Thor*, *Uncanny X-Men*, and many others. It was mentioned that every comic series will be affected in some way, and that not all cancellations will be permanent. It's clear from the highly recognisable flagship titles mentioned that *Secret Wars* is going to have a massive impact on the Marvel Comic Universe when it begins this May.

WHO'S NEXT?

NAG'S GUIDE TO CALL OF DUTY:
ADVANCED WARFARE

ZOMBIES
RUN, SHOOT, RELOAD

HOW TO NOT DIE IN EXO ZOMBIES

The end of the world has arrived: thanks to human testing at Atlas, zombies are now a thing, and they want your blood, brains, and all the gooey bits in between. It's up to you, a rag-tag group of leftovers that wouldn't be missed if you never turned up again, to hold off the zombie invasion as long as you can. Oh, and these zombies have jetpacks, so that's nice.

Round 1: fight. The zombies start off slow and are very weak, so conserve your ammo and take this chance to practise your knifing skills. One hit with the knife kills. By round two the zombies are twice as strong, so use your handgun and aim for the head. Now's the time to buy the M14 or Bulldog off the wall for 500 credits. Pick one; they're throwaway weapons. Turn on the power generator and pay attention to the location of Exo-Medic.

Open the door to Security/Administration and take note of the positions of the Decontamination Zone and the Upgrade Machine (around the corner) – you'll be using these a lot. As soon as you can afford to do so, open the next door, which leads to a corridor and ultimately the Morgue. In this corridor is a 3D printer, which always spawns here first. Go to the right and then run up the stairs. Smash the window and run into the room, noting the location of Exo Reload.

This area is relatively easy to control, just so long as you pay attention to any zombies that break in through the windows leading to Exo Testing. Stick around here only as long as you need to. Once you've earned enough credits, open the door to Exo Testing and head through. The power generator is just below you as you

come in: turn it on to unlock your Exo Suits. Grab a suit and get out of there as soon as possible. By now you're probably facing zombie dogs or special Exo zombies, some of whom EMP you when they attack. You don't want to be stuck in this room without being able to leap up onto the catwalk.

At this stage you have a choice: either head back the way you came and play the 3D printer until it malfunctions (at which point you should open the door into the Main Hub), or head into Holding. Holding is a dangerous place to get caught in but it has two incredibly useful Exo abilities, so you'll need to come here sooner or later. If you do go to Holding, try to use the long firing lines to your advantage to set up many zombies and mow them down quickly. If things get rough, use the limited verticality to buy yourself some breathing room and make a run for Main Hub as soon as you can.

Once you have all the doors unlocked, you'll want to make sure that you buy as many Exo abilities as you can while keeping your ammo topped up. The easiest way to get more ammo is to upgrade your weapon for 2,500 credits, but this can quickly get expensive. Space your upgrades as far apart as possible to avoid wasting ammo.

For the long haul, your strategy will depend on how many people are playing. If you've got a full house, it's advised to split up instead of clumping in a single location. Having one or two players moving around the map while the rest bunker down in a location is a good idea, and always use your turrets/drones if you feel control of the situation slipping away from you.

Legend

- **EXO MEDIC** / SOLO - 500 / MULTIPLAYER - 1750
- **EXO SOLDIER** / 1750
- **EXO SLAM** / 2000
- **EXO RELOAD** / 2000
- **EXO HEALTH** / 2500

- **POWER SUPPLY** +100
- **3D PRINTER** -1000
- **CREDIT MACHINE** +100
- **DECONTAMINATION** -250
- **UPGRADE MACHINE** -2500

Map Labels

- EXO TESTING
- EXO SUITS
- MORGUE
- HOLDING
- MAIN HUB
- OUTSIDE (START)
- ADMINISTRATION

WALL WEAPONS

#			
1	MK 14	500
2	Bulldog	500
3	AMR9	1000
4	HBRa3	1250
5	Explosive drone	1000
6	ARX 160	1250
7	TAC-19	1500
8	MP11	1000
9	Contact grenades	750

DOORS

- 750
- 1000
- 1250

BACK BOX

- ■ Black Box pick up
- ▲ Black Box drop off

TRASH CHUTES

- Trash Chute 1
- Trash Chute 1 drop location
- Trash Chute 2
- Trash Chute 2 drop location

POWER-UPS

● HYPER DAMAGE
Zombies instantly die when hit by any weapon.

● MULTIPLIER
Earn double points for kills and all sources.

● FULL RELOAD
Fully replenish all ammo and thrown weapons.

● SECURITY
Activate all security measures in the map.

● POWER SURGE
All 3D printers are active and cost just 10 credits to use.

● RESUPPLY
Dropped when you die, pick it up to regain one weapon. Can only be used by the person who dies.

● DNA BOMB
Kill all zombies currently on the map.

QUICK TIP

If you're the first one in your party into a room (presumably you paid to unlock the door), then do a quick check for any active credits terminals. They don't provide much, but hey, it's free money.

ZOMBIE TYPES

This time around things are a little different. We've got Exo zombies (these start at round 5), zombie dogs, and a few other variations on the theme. Whatever happened to good old fashioned regular zombies – why did they get all fancy? We're scared. Please call our mommies.

EXO ZOMBIES: (Wearing Exo suits) these guys start at round 5 and can jump higher and dodge your attacks here and there. As a terrifying bonus, crawlers with Exo abilities can leap from far away and nibble your ear lobes.

ZOMBIE DOGS: (Fast hairless Alsatians) similar to previous zombie dogs, these leave a full reload bonus when they've all been cleared. The dogs come in fast and low so huddling with your back to the wall is the safest place to be.

INFECTED ZOMBIES: (Ugly and gassy green) this is a tricky special round where dotted amongst the usual rank and file you'll find infected zombies. If they take a bite, you become infected and must make your way to the Decontamination Zone where 250 credits will decontaminate you – take too long and you turn into a mindless zombie. Each successive bite reduces the one minute time limit – so get moving. The pad also has a cooldown so don't be selfish.

EMP ZOMBIES: (Blue lighting) get too close to these guys and your Exo suit is temporarily disabled. This is the last thing you need when surrounded, out of ammunition and scared.

THE REST: (Various) some will explode and leave green acid behind while others are tougher and faster. It's a mixed bag out there so make sure you keep your eyes open.

Aim for the head! Not only do headshots do more damage, but they generate more credits per hit. On that note, weak but rapid firing weapons (like SMGs and LMGs) will bring in the most money, whereas high-power weapons will generate the least money per zombie killed.

Once the 3D printer malfunctions, it will move to a random room. Look for maps on the walls which tell you where it's appeared next.

EXO ABILITIES

MEDIC
Costs 1,500 credits in multiplayer, or 500 played solo. Makes reviving teammates much faster in multiplayer, and lets you revive yourself a maximum of three times when playing solo.

SOLDIER
Allows players to shoot while sprinting and sliding. Soldier also increases weapon-swap speed and enhances accuracy of hip fire. Costs 1,750 credits.

SLAM
Costs 2,000 credits. Unlocks the Boost Slam ability, which lets you leap into the air and slam the ground, dealing area damage to zombies around the point of impact. Creates loads of crawlers, and there's a brief cooldown between slams.

RELOAD
Extremely useful ability. Allows you to reload faster, and reload while sprinting. If you've got an LMG or shotgun, it's a must have. Costs 2,000 credits.

HEALTH
Perhaps the most vital of all the abilities and therefore the most expensive at 2,500 credits, Health increases the number of zombie hits you can endure before collapsing from four to seven.

Each room has a power generator. Learn their locations and get into the habit of switching them on as soon as you enter a room for the first time.

Try and time the 3-D printer so that you choose the distraction drone. These come in handy if all four players have one. It essentially gives you a chance for a breather at least four times during an intense round. If you get a full ammo drop you get 2 drones. A must have for the higher rounds.

QUICK TIP

When you get knocked down, you'll slowly bleed out until you die. During this time, any Exo abilities you bought will also slowly be removed, in the reverse order in which you acquired them. Exo Slam is arguably the least useful of the abilities, but purchasing it will give you some buffer to help protect the essential ones like Health and Reload.

QUICK TIP

The 3D printer will give you the exact weapon that's currently on display, so time that button press perfectly.

GUNS GALORE • • •

GEOMETRIX'S FAVOURITE

The CEL-3 Cauterizer, or the "suck it zombies" gun as I like to call it. The Cauterizer is a perfect weapon for those who like to stay flexible in the zombie apocalypse, as its default mode of fire is a wide spread of burning death, but down the sights it focuses that spread into a tight cone of head-popping love. Sure, its total clip size and reserve ammo is pretty limited, but I'm the sort of person who goes for Exo Reload before anything, so this isn't a deal-breaker for me.

SAVAGE'S FAVOURITE

The Pytaek. This is the big daddy of guns. A heavy machine gun with a huge clip and high damage and hardly any recoil. Capable of precise headshots and also mowing down a crowd of zombies. Once you start to upgrade it this gun becomes a redecorating tool, you'll redecorate the walls with zombie gibs!

REDTIDE'S FAVOURITE

In the beginning I like to steal kills and knife zombies to maximise my money so I can play the mystery box (now a 3D printer). The people I play with get angry sometimes but hey, this is a crisis situation and when the chips are down and flesh is being eaten it's every man for himself. My favourite weapon is the Ameli (from the Spanish ametralladora ligera, or light machine gun). These LMGs always pay off in the long run. Because these damn zombies always manage to get behind you, secondary is the CEL-3 Cauterizer for close up action. Boom!

BARKSKIN'S FAVOURITE

We've shared many wonderful memories, the S-12 shotgun and I. It's a fully automatic, rapid-firing, room-clearing monster that starts off with ten shells in the chamber and 80 in reserve, and those numbers rise when it's been upgraded enough. It's best used as a secondary weapon, because it burns through ammo at such a terrifying rate that you'll want to be conservative with it. It's most useful when you're being chased by a tightly packed mini-horde of the undead and need to swiftly cut through them. Pair it with an LMG like the Pytaek or the CEL-3 Cauterizer, and you're golden. **NAG**

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RELEASE DATE > Q4 2015
PLATFORMS > 360 / PC / PS3 / PS4 / Wii U / XBO
GENRE > Rhythm game
DEVELOPER > FreeStyleGames
WEBSITE > www.guitarhero.com
PUBLISHER > Activision

GUITAR HE

PICK UP & PLAY

I t's been five years since the release of the last game in the *Guitar Hero* series: *Warriors of Rock*. That's five very long years if you're a fan of rhythm games – a genre that's taken a back seat for the last few years; only Ubisoft's *Rocksmith* and a steady stream of DLC for EA's *Rock Band 3* have kept the idea alive. All of that changed recently when EA announced that it was bringing back *Rock Band* with a new addition to the series, and now, hot on its heels and reminding us of the gaming peripheral war of the previous generation, there's a new *Guitar Hero* headed our way later this year. We met the developers, played a few songs and got a chance to dig inside the thought process that's gone into *Guitar Hero Live*; join us as we tell you all about it...

There's a lot that's changed about *Guitar Hero Live*: there's a new developer, a new controller, completely restyled visuals, and a possibly game-changing online mode.

Okay, so the development studio in question isn't completely new to the franchise – FreeStyleGames was responsible for 2009's *DJ Hero*, a spin-off of the main series that featured a completely different controller and a focus on electronic music. As you may know, the *Guitar Hero* series has had it rough over the years, bouncing between development studios and ultimately losing its way because of this. FreeStyle will be the third core studio to get their hands on *Guitar Hero* (among others responsible for porting the games across multiple platforms), and after their ingenuity with *DJ Hero* we can't think of a better studio to handle the re-awakening of the *GH* series.

Guitar Hero Live isn't called as such just because it sounds cool: there's a huge shift in the presentation of the game to give it a realistic feel. Gone are the caricature rock stars like Judy Nails, Axel Steel and Johnny Napalm; everything you'll see is a video recording of actual people. When playing the main game mode – Live – players will be presented with a first-person view of a music festival as seen from the eyes of a guitarist in a band. It begins backstage: roadies, producers and band mates

RO LIVE

mill about in preparation for the big show. Then it's time: you walk through the alleyways behind the scenes of a rock concert as the dulled cries from the crowd grow in volume. Finally you're on stage, human faces greet you in anticipation, and your drummer kicks things off. FreeStyle wants to create a sense of stage fright – they want you to feel like you're performing in front of tens of thousands of people, and a lot has gone into making that happen in the most realistic way possible. They want to recapture that feeling of being a rock star in your living room by taking the physicality of the guitar controller and combining it with strong visual and audio cues.

By putting players into the role of a musician playing a live gig, FreeStyle is trying to represent one of the two main ways that music is consumed by today's generation: concerts, and online streaming. They say that music consumption patterns have changed greatly in just the five years since the last *Guitar Hero* (and even more so in the decade since it was first introduced). It makes sense then that the second mode available in *Guitar Hero Live*

is based on an online streaming service, called Guitar Hero TV.

GH TV will give players a number of online channels to connect to from within the game, divided among genres, playlists or any other method FreeStyle has in mind. Players then connect to a channel, jump into whatever song is currently playing, and challenge other players online within their skill bracket. Instead of a live gig with real actors, players will be presented with the music video of the song currently being played. The team at FreeStyle sees this as a way to introduce players to new music and artists, although there's a big difference between this method and the classic DLC system: this one won't cost you extra. The price of admission to GH TV is simply the purchase price of *Guitar Hero Live*. You'll also be able to jump into specific songs at will. As for custom playlists and private online matches or tournaments, there's no word, but at its core GH TV won't cost you a cent more than the purchase price and the no-doubt large amounts of data it'll consume while streaming music videos to

PUTTING IT ALL TOGETHER

Every song that you play in Live mode is a recreation of the real deal, as it would be performed on stage in front of a live audience. While you won't be playing alongside the real band members from each song, the actors spurring you on (or shaming you when your performance falls behind) are indeed real musicians.

To create this interactive first-person experience, FreeStyle began in the rehearsal room. There, each "band" of actors learned to play each of their songs (there's a band for each genre: indie, classic rock, folk rock, dance rock, etc.) in a way that encompasses a final band member in the form of a camera operator, who represents the player. When everyone feels they've got it down, a performance is recorded in a motion-capture studio to track the movement of the camera operator as they move through the scene. After that, the band is taken to a mock live set, complete with real crowds,

where the human camera operator is switched for a computer-controlled, robot-mounted version called a motion control rig, which accurately recreates the realistic movements of the camera operator. The band and crowd then perform a "good" set of the song, as if the player played their part perfectly. After that, a "bad" performance is recorded.

The two performances are recorded identically by the robotic camera, which allows the game to switch between them as the player plays the song. If you do well, you'll be treated to a responsive crowd, supportive band mates and a great atmosphere. But make too many mistakes and the visuals switch over to the other side: the crowd jeers at you and your band mates give you a "what the hell are you playing at?" look. The end result is a cinematic experience that's unique and fairly seamless.
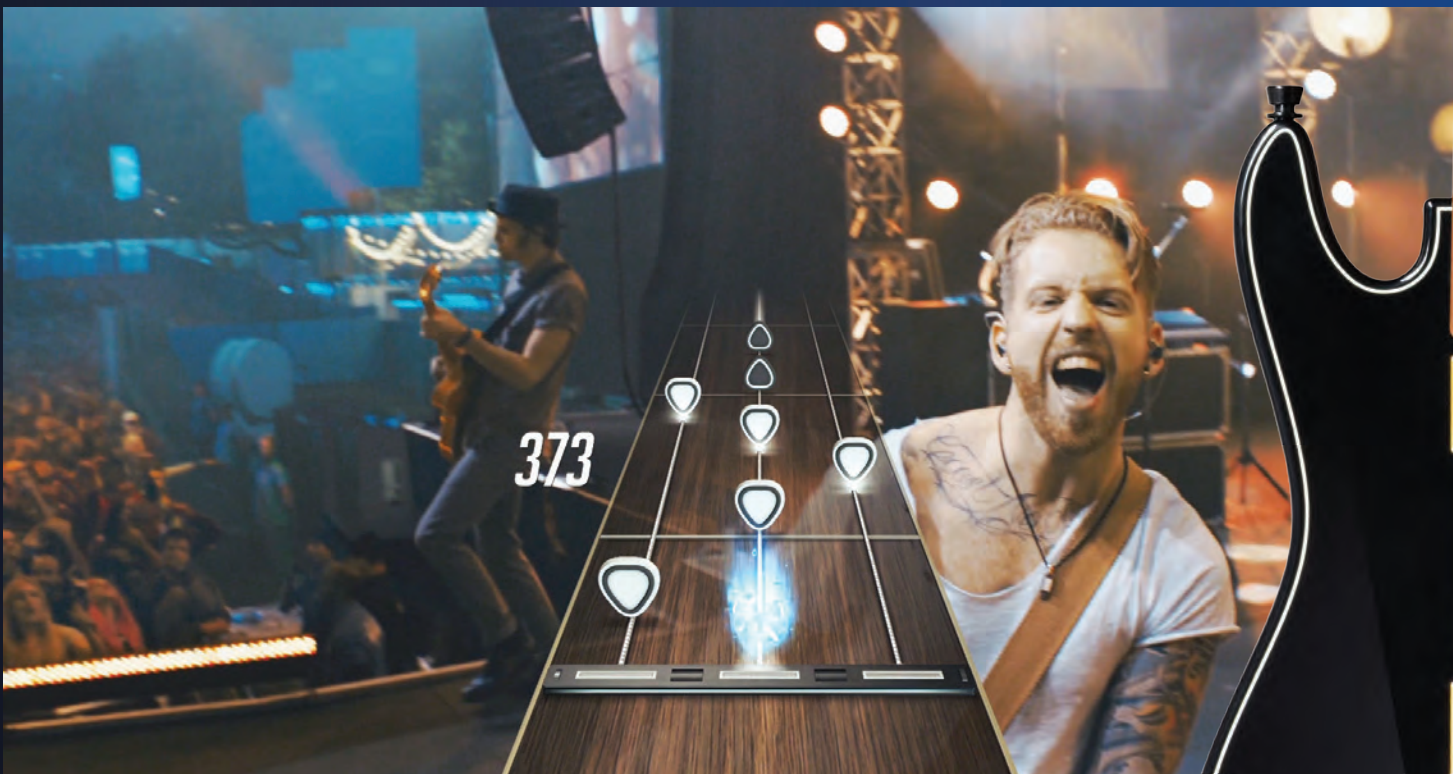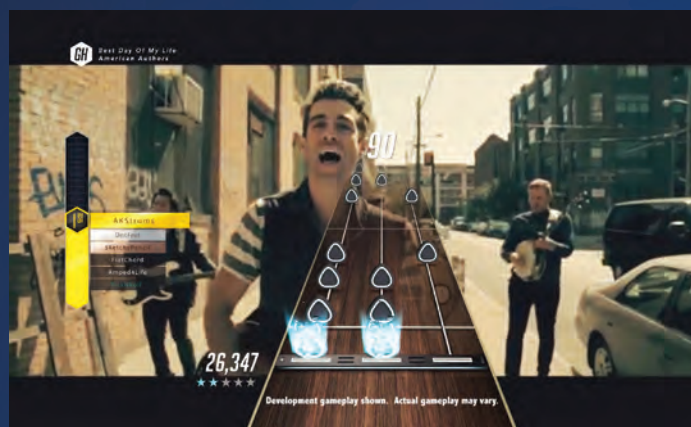
> All of the audio in the Live mode performances is mixed in real-time 3D, which means as your character moves around the stage (this happens automatically), you'll hear the volume of your band mates' instruments change to create an immersive audio experience.

▶ *Guitar Hero Live* is headed to a number of platforms, including mobile devices. While those devices haven't been specified yet, what we do know is that there's going to be a physical guitar controller along for the ride. That might be the regular controller (connecting via Bluetooth, we'd imagine), or a whole new one. Stay tuned for more details!

your TV. This is a very exciting prospect and we hope it'll take off as a way for musicians to reach new audiences.

Going into the development of a new *Guitar Hero*, FreeStyle knew that they had to innovate on the guitar controller. We've seen all manner of guitar controllers from various publishers over the years: those sporting extra slide bars, six fake strings, buttons all the way up the neck, full MIDI guitars, even support for real guitars with the likes of *Rocksmith*. FreeStyle tried them all during the prototype stage of development, but ultimately settled on a design with two rows of three fret buttons, and a simple strum bar that can be activated by clicking up or down. That means your old guitar controllers won't be usable with this new game.

This new fret button design does a number of very important things to the gameplay. For starters, you never have to move your hand along the neck of the guitar controller: it stays in place with your index, middle and ring finger each on a corresponding fret. To make up for that, you'll now need to move your fingers between a top and bottom section of each fret, better emulating the sort of chord shapes you're likely to find on a real guitar while playing rock music, instead of the pinkie finger gymnastics that earlier *Guitar Hero* games became

most well known for. That's not to say that this method of playing is easier – if anything it's potentially more challenging thanks to the addition of a sixth button – but it makes a lot more sense than what we've seen in the past. As well as simply holding down the right fret button at the right time, you'll be required to perform barre chords, hammer-ons, pull-offs and other familiar guitar manoeuvres on higher difficulties and more complex songs. As you increase the difficulty level (there are four available), new challenges are introduced and the pace required from players is increased.

The video game industry has changed significantly in the last 5-10 years, as has the music industry. What's clear to us is that FreeStyle and Activision acknowledge those changes, and aren't simply jumping on the remake/remaster train to churn out a quick game based on a familiar but aged franchise. *Guitar Hero Live* is exciting and intriguing. There's still plenty to be announced at E3 this year so hopefully any questions you might have will be answered then. This is certainly a game worth keeping an eye on, and one that we hope lives up to its legacy as a game that was perfect for hardcore gamers, casual players, musicians, and party-goers alike.

INTERVIEW

WITH JONATHAN NAPIER,
PROJECT DIRECTOR AT FREESTYLE GAMES

Development gameplay shown. Actual gameplay may vary.

NAG: This new guitar design is quite a change isn't it? The way the buttons are pressed is far more like playing a real guitar.

Jonathan: That was at the core of what we're trying to do. We had the opportunity to come up with a new guitar controller and we put a great deal of effort into it, and we felt that we were quite happy with what the right hand was doing – in terms of the strumming and the whammy bar – that felt good. We did try some variations but we didn't come up with anything that much better than what we already had. But we felt it was with your left hand that there was a lot more that we could do.

We had many different prototypes, trying out all different types of buttons and spaces and clever bits and pieces, and this one just stuck. We felt "ah, I think we've cracked it". We've got a row of three buttons along the top and three along the bottom. For a rookie they're doing relatively straightforward button pressing, but as you start to get more advanced you're making barre chords and split chords. You can imagine when you start getting into some of the more complex songs there are lots of complicated shapes and combinations and permutations – many more actually, than what we've had before.

So we felt this was a good new gameplay development. It also gets you much closer to the feeling of being an actual musician, which is part of what we're trying to achieve as well. Now, when you move your hands around, you really feel "wow, I'm really getting it". And certainly those rhythms and chord shapes are built into the markup that you have on the highway in the middle of the screen, so you're rhythmically moving back and forth between these different configurations. We're very happy with it and we think it works very well.

NAG: It does take some getting used to...
Jonathan: Not that long though. We found that within a couple of songs people tend to adjust to it.

NAG: Otherwise, the controller looks mostly the same, with the exception of the "Hero Power" button. Is that the new "Star Power"?
Jonathan: There's more to come there. Stay tuned for details.

NAG: But at its most basic, will Hero Power temporarily boost your score?
Jonathan: Amongst other things, yes, it will do that.

NAG: In terms of the strum bar it seems to behave in much the same way.
Jonathan: Yeah, we didn't change that. You know, looking at the gameplay we've changed a lot, and we really didn't want to change everything. We tried to keep it familiar as far as this [controller] is concerned. Also, we're limited with what we can do, otherwise it wouldn't look like a *Guitar Hero* controller.

But it's been nice to be able to produce a new controller.

NAG: And how does the controller connect to the console? Is that via Bluetooth? Could the same controller work for the mobile version?
Jonathan: I can't tell you yet how it connects other than "wirelessly". I can't tell you too much about mobile, other than there is a physical controller for it.

NAG: I haven't see any co-op play so far – is that in the game?
Jonathan: Co-op is in the game. In both modes. In GH Live you can have two highways up the screen for that local co-op experience. And the same is true for GH TV. That was very important to us when we were developing the game, that the local multiplayer cooperative experience is key to it. *Guitar Hero* has traditionally been a really strong party game: people invite their family and friends around. We know that's very important and we tried very hard to make sure it's still in there. And we've built on top of that as well. More things to come... you'll be able to see other things that we've done to really boost that party game experience.

In GH Live if I'm the main guitarist, everyone gathers around me and there's so much to see on the sides of the screen, little things to point out. Then after a while if you switch over to GH TV, you've got the music video network experience that you can just let run. People can jump up when they want to play a song, or your friends might start to get a bit competitive and

go into the on-demand song menu and play a song over and over again to see who can get the top score. That experience is at the core of the game and what makes it fun. We're really making sure that that's there.

NAG: Is that both players playing lead guitar or is that lead and rhythm, or lead and bass?
Jonathan: I can't say specifically on that yet.

NAG: I've noticed what might be a spectator-driven decision, is that you've stripped away a lot of the UI elements to show more of the crowd.
Jonathan: For GH Live that is true: we're trying to create that immersive experience of you being up on stage with your real band mates and musicians and having that real crowd out there. In order to bring that to the forefront, we've removed some of the screen furniture and tried to cluster things around the highway as much as possible. But, in GH TV, which you might call a home arcade experience, there'll be a lot more user interface furniture around the screen: there's a highway down the left side of the screen which shows your position versus the other people playing in your current session, and there are various other score boxes and bits of information.

NAG: To clarify, is the GH TV experience included or will there be an extra cost?
Jonathan: It's included when you buy the game. At the core of what we're trying to do with GH TV is create a music network that can become a discovery platform for many years to come. Next year if there's a big album launch or a new hit single we hope that we'll be able to get hold of those songs and get them in the game fast. That's what we're doing there: enabling players to discover new music and music videos that they otherwise may not have come across. We don't have to wait for a retail release: we can put new content into the game on a regular basis. **NAG**

GeometriX

What DirectX 12 means for gaming performance

WINDOWS 7 VS. WINDOWS 1

Just a few months ago, Microsoft made a series of announcements regarding Windows 10. Amongst them an unprecedented move by the Redmond firm to offer Windows 10 as a free upgrade to not only Windows 8.x, but Windows 7 users as well. With this move, Microsoft was essentially offering the upgrade free to the vast majority of computer users. Furthermore, Microsoft also stated that for all those unfortunate souls running illegal copies of their operating systems, they too would be able to upgrade to the

latest version. The catch being that the upgrade would not turn an illegal installation into a valid one. The affected computer would, for the most part, still be running an unlicensed version of the operating system.

This means that Windows 10 may be the single most widely used Microsoft operating system of all time, as there's literally little to no reason why users should remain with Windows 7 and even perhaps Windows XP. With similar system requirements as Windows 8, even lowly systems with as little as 1GB of RAM qualify for the operating system.

What matters for us, however, is how this all affects our gaming, as Windows 10 represents a massive change for us all, entirely due to how it differs from the previous offerings at the lowest level.

BACK IN THE DAY
Windows 2000/XP used an XDDM model which was later switched in favour of WDDM (Windows Display Driver Model) 1.0/1.1 model in Windows Vista and Windows 7. This was the primary reason why DirectX 10 never made it to Windows XP. Changing the driver model impacted the underlying system, which it is part of in a non-trivial manner. The process of back porting the API along with the driver model would be a massive undertaking potentially causing more incompatibilities far outweighed by the features it added to the aged operating system. As such a break was necessary and DirectX 9.0c would be the last API update that operating system would see.

This single change in the driver model allowed Windows 7 to enjoy all iterations of DirectX all the way to DirectX 11.1. However, when minor changes to the API surfaced, they again required an updated WDDM which came in the form of WDDM 1.2 as presented by Windows 8.0, where Windows 8.1 ushered in WDDM 1.3. This change wasn't met with as much resistance and confusion between the two Windows 8.x versions because Windows 8.1 was a free upgrade to the ill-received Windows 8. The changes to the operating system's display model were virtually transparent to the end user and the gaming experience and performance remained undisturbed and, if anything, improved through a more robust operating system.

With Windows 10, Microsoft is hoping to repeat this seamless transition, even though the differences brought forward are of monumental significance. In fact, WDDM 2.0 in Windows 10 presents such a large change in the display model that it is akin to when we moved from the XDDM to WDDM model. It may not seem like it because our GPUs, from as far back as 2010, are in theory capable of making some fundamental use of the new API.

That is to say graphics cards such as the GeForce GTX 480 (Fermi) have hardware support for DirectX 12 at a basic feature level (DirectX 12 support and compliance is set as three tiers (or feature levels), where the lowest is the most basic and the highest is the most advanced with a full complement of capabilities).

This brings us to a very important point about DirectX 12 and perhaps one that is at the core of everything the new driver model and API are about. In order to appreciate this we must realise that the brute force approach we have used since the dawn of DirectX to leverage GPU

The long and short of it is that DirectX had a legacy problem, and even though plenty of it was resolved with DirectX 10 breaking away from the convoluted complexity that was DirectX 9.0c and all previous versions, it still dealt with adding specific rendering features and flexibility but not addressing the underlying performance issues. A unified shader model was and remains a great milestone for all, but it was addressing an issue at a very high level of uniformity and resource utilisation. Virtualised memories along with simpler or more effective context switching and subsequently better use of the hardware resources (no wasted silicon in making discrete vertex and fragment/pixel units) was and remains great. For the most part though, the problem remained and for the first time it was looking to be DirectX itself.

Qualitatively at pixel level, there isn't much difference between DirectX 10 and 11. Tessellation was a standout feature, but through exploitation of the geometry shader in DirectX 10 hardware, and using many of the features present even in DirectX 9.0, such as parallax mapping and 3D textures, could render similar if not nearly indistinguishable results. Remember that ATI's TruForm technology existed in the DirectX 9 era, based on N-patches to create high order surfaces from very basic vertices and meshes. How any developer would bring that to a real time engine was not obvious prior to DirectX 11, which made it significantly easier.

Already in 2010 we had hardware that could process and manipulate

capabilities has reached the end of its usefulness. In the early days of DirectX, we essentially had graphics co-processors and even when the first rudimentarily programmable GPUs and DirectX iteration (7) surfaced, we were dealing with plenty of fixed functionality within the GPU and our software behaved accordingly. GPUs and scene complexity was almost entirely dictated by fixed hardware assets, such as fill-rate, vertex operations, bandwidth, texturing, small memory pools etc. With no compute component to the rendering pipeline, the solution to ever increasing GPU power was to add more of everything above. For instance, in 2000, the GeForce 256 DDR graphics card doubled the GPU bandwidth and effectively increased performance by over 50% in some scenarios. This was the kind of performance gains that a brute force, by the numbers, approach yielded.

Which again is why developers, engines and games were built to reflect this along with the API. What ended up happening, however, is that because the ceiling for optimising performance was so low, developers and all related parties including Microsoft themselves (and OpenGL's keeper group at the time) didn't really take time to re-evaluate this trajectory even when it was clear that it would lead to diminishing returns in future.

tens of millions of vertices at any given time but accessing that power was becoming more complex and yielding diminishing returns for both developers and hardware vendors. In an analogy, think of your favourite hot hatch, be it the current Type-R, OPC/VXR, Focus RS, GTI etc. They are wonderful feats of engineering and deliver unprecedented handling and performance for front wheel drive vehicles. They represented countless hours of engineering and R&D effort poured into defying the physics that plague such drive trains with such vast amounts of power. Adding another 400KW of power to any one of those cars would at best yield very little in terms of improvement in performance and at worst would make the cars very difficult to drive. As such, they would spend most of their time doing straight line sprints or navigating turns at speeds no faster than what the regular models can.

This is precisely the situation that GPUs and the current WDDM 1.3 / DirectX 11 structure is facing. We've added vast amounts of processing power and flexibility but it hardly gets taken advantage of simply because the legacy approach of the API is incumbent.
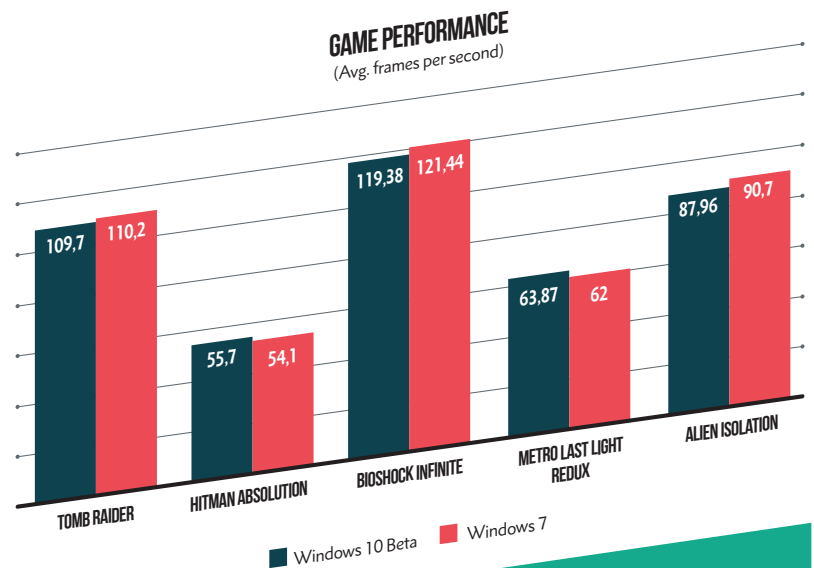
"DirectX 12 finally embraces multi-threading."

DirectX 12, along with the driver model, has done a great many things to alleviate this situation. It has been a project in the pipeline for some time and contrary to what you may have read, it was not spurred on by AMD's efforts with their Mantle API. The efforts around DirectX 12 were undertaken with Microsoft, Intel, AMD, NVIDIA and other hardware vendors prior to any public announcement of Mantle. Where Mantle is GPU specific, DirectX is accessible to any vendor that makes a WDDM 2.0 compliant device.

DO MORE WITH YOUR TIME

DirectX 12 finally embraces multi-threading. Not as a limited add-on feature as presented in DirectX 11, but it adds this explicitly, decoupling the heavy single thread performance dependency from the rendering pipeline and spreading it over all available host CPU threads. Where in DirectX 11 a single primary thread would perform more than double the amount of processing the other threads would, in DirectX 12 you're looking at a near even split between four cores or threads for instance. With a primary thread handling only 10% more load or so above the others due in part to having to deal with the last stage in the rendering pipeline for output.

This has massive implications because it potentially allows doubling of rendering performance if not more depending on the program and host CPU. Frames that were reliant on the CPU element taking

GAME PERFORMANCE
(Avg. frames per second)

Game	Windows 10 Beta	Windows 7
TOMB RAIDER	109,7	110,2
HITMAN ABSOLUTION	55,7	54,1
BIOSHOCK INFINITE	119,38	121,44
METRO LAST LIGHT REDUX	63,87	62
ALIEN ISOLATION	87,96	90,7

number of triangles. As a result of the reliance on single thread performance in the older API, a program would want to avoid sending too many draw calls because it would saturate the CPU and leave the graphics card doing very little. In essence because of the single threaded nature of the API it was easy to come to a CPU bottleneck far before the GPU had reached its limits. So even with a powerful 16 thread CPU, it would have near identical draw call limits as a two thread CPU at a similar clock speed with all other things being equal.

in excess of 10ms to render can be handled in under 5ms. Extrapolated, that is double the frame rate over 1,000ms (one second). This is a theoretical example, but it does serve to illustrate how significant the changes are in multi-threading with the new API. For once there just might be an advantage to owning that six to 16 thread CPU over the normal four core CPUs we were first introduced to almost a decade ago. IPC will no longer dictate the CPU performance at a basic level at least for games. Part of this massive performance boost is pegged on the removal of the Kernel mode driver in the rendering stack, optimising and threading the user mode driver and reducing the amount of time spent within the Direct3D API logic itself.

Secondly, DirectX 12 allows significantly more draw calls to be made to the GPU: anywhere up to eight times the number of calls compared to DX11. Why this matters is because draw calls are the basic commands that tell the GPU to render a specific set of vertices as triangles with a specific state. These are usually sent as an X number of batches containing a variable

This limitation again was not evident in the early days when most desktops had single or dual core CPUs. It became a major problem that would only become larger until it resulted in the state we find ourselves in today. It is a direct result of this static approach to rendering in an ever changing world of multithread CPUs. In a practical in-game situation, that meant developers were limited to an arbitrary number of draw calls and thus could only populate any scene with a relatively low number of objects. After all, with every new independent object in a scene, a new draw call is required. While improving the quality of the low number of objects on the scene and ensuring pixels are realistically lit and shaded with each generation of graphics card and API, there was no effective way of getting around the limits of the draw call submissions. With DirectX 12, these two changes alone account for massive performance gains. They allow for almost console-like closed system optimisation on an open platform such as the PC.

HIDDEN TALENTS

There are other changes in the API, such as the pooling of GPU resources (including the memory) which are worth noting. They do not present as massive a departure from the previous APIs as the multi-

threading and draw call advancements but they do allow for some very interesting configurations. For example, currently with any multi-GPU solution, there is plenty of resource wastage. That is, two GPUs with 2GB of memory each only have effectively 2GB in total to use. The GPUs and system cannot access the memory in a unified or continuous flat structure as 4GB. As a result, half the memory is wasted as each memory pool on the GPUs is independent but must be mirrored and updated to contain identical data and instructions at every turn. While there have been massive improvements in multi-GPU scaling and most games scale a respectable amount, what is happening is that both AMD and NVIDIA are having to hand-tune every game for their respective multi-GPU implementations. Some games were made with such configurations in mind and they lend themselves well to such systems, but many are not and it's pretty much a painstaking process of optimizing every single game, adding the desired setting to a database and then folding that into successive driver updates. That system is time consuming and again a brute force approach to

what can be solved in a more elegant but straight forward manner. DirectX 12 and the WDDM have the unique ability to present the GPU resources of a system as a unified pool to the application querying them. Fine grain control as to which GPU does what is made available for the first time to the developer (and subsequently the program at runtime) so they can drill down to the lowest level and allocate resources manually to each GPU. However, should they not wish to do this, in theory basic multi-GPU scaling should always be possible with little to no intervention from the hardware vendors. So the days of painstakingly adding multi-GPU profiles for each game should come to an end and if not they should be dramatically reduced.

As such, your current GCN1.0 and newer GPUs in CrossFire or Fermi GPUs and newer in SLI will be presented to the applications in Windows as a single GPU resource of double the amount of memory that was previously available. Suddenly your 2GB configuration is 4GB, your 3GB turns to 6GB and so on. At least that is the theory.

The downside here is that current applications that were built with DirectX 9/10 and 11 in mind will have a hard time benefitting from these API changes. In fact many will not see any benefits at all, outside of what the operating system brings via other performance improvements and driver updates from the vendors. What you see in our graphs represents this exactly.

"The only graphs that you should concern yourself with in as far as synthetic performance gains are concerned with the new operating system and API are the 3DMark feature test results."

The differences between Windows 7 and Windows 10 beta are minor and in some cases the performance is better on Windows 7.

Do not interpret these results as a failing of DirectX 12 or Windows 10. What you are looking at are programs that are unaware of the changed operating environment because they have to continue to work as normal in Windows 10 as they did in Windows 8.1 and older. The operating system and API is presenting itself as a familiar system and behaving accordingly.

The only graph that you should concern yourself with in as far as synthetic performance gains are concerned with the new operating system and API are the 3DMark feature test results. Here you can see clearly just how many more draw calls can be made on a GTX 780 Ti under DirectX 12 versus DirectX 11. The differences are staggering, with DirectX 12 delivering over seven times the performance.
This is but a small portion of what Windows 10 is about. That we will look at in more detail at another time. For now, this is a general

overview of what the operating system and new DirectX 12 API bring to the table. What is for sure though is that this is a major turning point for our hardware, gaming and computing in general. The changes will have far reaching consequences even outside of our computing devices. It is still early days, but even now DirectX 12 and Windows 10 look promising. Easily the most important API change and operating system since inception. **NAG**
Neo Sibeko

3DMARK API FEATURE: DRAW CALLS

15972536 — Windows 10 Beta (DX12)

2702067 — Windows 7 (DX11)
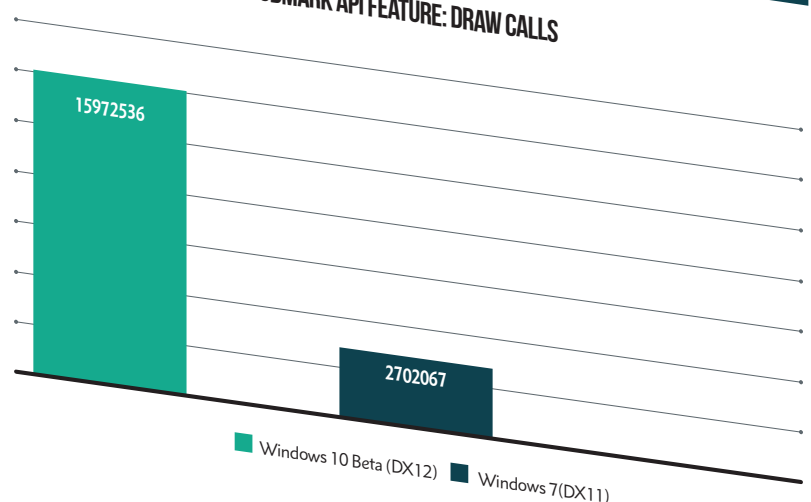
RELEASE DATE >	TBA
PLATFORMS >	PC
GENRE >	Third-person action
DEVELOPER >	Psyonix
WEBSITE >	www.nosgoth.com
PUBLISHER >	Square Enix

**HANDS ON
TESTED**

Nosgoth
Vae victus!

I f you're any sort of a fan of *Legacy of Kain*, then I'm willing to bet that you're perpetually a moment away from taking up arms and marching down to the offices of Square Enix to demand the next game in the series. Unfortunately, it looks like that sequel is unlikely to happen in the near future (the latest attempt was canned after a not insignificant amount of work had been done on the game), so until that day comes, *Nosgoth* is your best chance to enjoy something at least vaguely related to a few things that the wacky duo of Kain and Raziel got up to all those years ago.

It's important to note that *Nosgoth* is not part of the *Legacy of Kain* series. Sure, it finds its way into the series, but since you play neither Kain nor Raziel, and its gameplay is quite different, it shouldn't be considered a sequel of any sort. Once you move past that devastating news you'll be liberated to see *Nosgoth* for exactly what it is: a competitive multiplayer game. Some elements tie it into the series, like the classes on offer, bits of the user interface, and even a few reused sound effects, but for the most part it's safe to treat this as a standalone game.

The game is currently in open beta, which means it's starting to take shape and give players a real indication of where it's headed. There are only two game modes currently on offer: team deathmatch, and a mode called Flashpoint in which players attempt to capture points on a map. Both modes see humans fighting against vampires in 4v4 combat. While the team sizes might seem small, the gameplay has been balanced in a way that

> *"A strong team of humans who work together instead of panicking and running for their lives has managed to wreck a few poorly coordinated vampire teams."*

helps it make sense, as battles tend to rise and fall in a rhythmic manner, requiring tactical thinking and a very strong focus on teamwork.

Each faction is currently comprised of five classes, with the humans tending towards ranged combat and the vampires favouring close-range fighting. Each class has a specialisation, like the human Alchemist who deals massive splash damage and controls areas, or the vampire Sentinel who swoops in on giant wings but can't stick around in combat for too long. There's something for everyone, and games will see teams swapping sides halfway through to ensure a sense of fairness. So far, the games I've played tended to favour the vampires, although a strong team of humans who work together instead of panicking and running for their lives has managed to wreck a few poorly coordinated vampire teams. This will certainly be a game that encourages clan play.

> Gold is earned by playing games (with a bonus for winning), and is also given to players for simply logging in each day. Additional rewards are given by logging in for multiple days successively.

> Each of the vampire clans (which in turn are playable classes) is named after the vampire that sired them, effectively created sub-races of vampires over the years. Many abilities that Kain and Raziel gained over the course of the *Legacy of Kain* series manifest in some form here, like leap attacks, limited flight, mist form, and disguising as humans.

HOW THIS CAME TO BE

The story of *Nosgoth* goes that some years after Kain claimed the throne of the land (called Nosgoth), his top vampire lieutenants were given free rein to sire whole legions in their own images and slaughter or enslave any humans who hadn't fled. Even the untrustworthy Raziel got a chance to have his own little sub-species of winged vampires, but before long, Kain changed his mind and cast him into the Abyss. Shortly after, Kain absconded and disappeared, leaving the now rampant vampire clans to squabble over Raziel's former territory. Things got messy and continued to do so long enough for the humans to sneak their way back into existence as something more than slaves.

The humans rediscovered ancient technology and martial arts, trained in secret and eventually rose up to claim back Nosgoth, with the aim to set it back to what it once was (more or less how things were when the series began with *Blood Omen*). With the vampire clans forced to set aside their differences, Nosgoth is now ravaged by war between them and the humans.

Nosgoth is being pitched as a free-to-play game, which means it's possible to play without spending any money, but weapon and character class unlocks are grind-heavy for those with tight purse strings. Unlocking new classes happens at a reasonable pace, with a freebie every five player levels, but weapons and equipment seem to be very expensive in terms of both in-game gold and the real-money currency of Runestones. Luckily the base classes and abilities are strong enough to stand up to those that cost money or time to unlock, with those offering variations on gameplay elements instead of simply being more powerful. For example, the Reaver's Pounce ability usually allows you to slowly crawl around, then lock onto an enemy to leap at great speed and incapacitate them while doing moderate damage. Variations on this include greater damage without the lock-on, or faster crawl speed without the temporary incapacitation of your enemy. What you choose to unlock will depend on your own play style, and I sincerely hope that future unlocks stick to this ethos instead of going the way of the dreaded pay-to-win.

For all the misery *Nosgoth* brings by simply not being a "proper" continuation of the *Legacy of Kain* series, what I've played so far has been incredibly fun despite its somewhat unoriginal gameplay. When it comes to combat, there's little that's innovative about *Nosgoth*, but what has been developed so far is solid and fluid, and makes f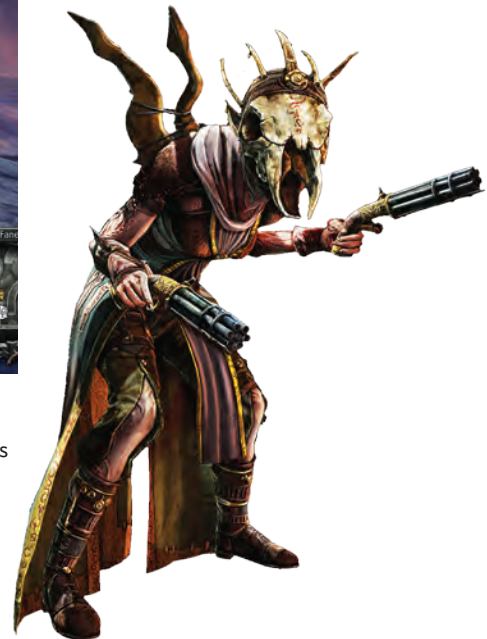or some great moments of bad-assery and utter shame alike. Hopefully development will continue forward at a decent pace without getting brutalised by a shoddy micro-transaction system. If Psyonix and Square can work together on something that benefits players and publisher alike, I see a bright future for *Nosgoth*. **NAG**

GeometriX

RELEASE DATE >   TBA
PLATFORMS >   PS4 / XBO
GENRE >   Action role-playing game
DEVELOPER >   Square Enix
WEBSITE >   finalfantasyxv.com
PUBLISHER >   Square Enix

HANDS ON
TESTED

Final Fantasy XV
The fantasy is finally becoming a reality

For a long time, *Final Fantasy XV* seemed like the gaming equivalent of an urban legend. Young RPG fans would gather around message boards to talk about *THAT GAME*. You know, the one that was announced, and then disappeared, never to be seen again. Sometimes, if you listen to the forums at night, you can still hear it howling...

First announced in the Dark Ages of 2006 and under a different name, *Final Fantasy XV* is finally playable, but only in demo form. Subtitled *Episode Duscae*, the demo takes place in a supposedly early part of the game. It begins with very little context, and introduces us to our party of heroes as they wake up in a tent. The team is on the run from a warring nation but for now must contend with a very real-world threat: car troubles. The demo mostly shows off how the open world, combat, and various other gameplay elements will probably work in the final version, set to the backdrop of raising the cash to repair your car.

The protagonist is Prince Noctis Caelum who, despite sounding like the angsty frontman of a punk band, is actually pretty badass. He's joined by his bodyguard Gladiolus, Ignis his war advisor, and his childhood friend Prompto. It's interesting noting the Latin naming conventions used in the game. Instead

> When it was first announced, the game was a PS3 exclusive called *Final Fantasy Versus XIII*, and was considered a spin-off of *FFXIII*. The decision to change it to a fully fledged entry came in 2011 when Square Enix decided to redesign the game for PS4 and XBO.

of being named after a weather pattern, Noctis' name translates into "night sky". It's a good bet that being fluent in Latin will give a few spoilers if you run into a character named "Scelus".

Character interaction has improved in the game, and definitely seems inspired by Western RPGs like *Dragon Age*. They'll banter as you explore, fist-bump after a battle, shout for support in an attack, and generally act concerned if another character is hurt. They've also all got nicknames for each other, and the atmosphere of bromance is tangible. Unfortunately, not enough battle dialogue was given to them, and they repeat lines a bit too often in the demo.

One of the selling points of *FFXV* is that it's all open-world, and the demo introduces a sense of scale and enormity that's been absent from the series for too long. The map is huge, and only represents one zone in the game. The long draw distance lets you marvel at the massive dinosaur-like beasts and towering rock formations from far away. The aesthetics are unique, a retro-futuristic blend of '50s style and flying airships. It's lifelike too, with cars driving on the road and large animals roaming in herds

> "Noctis feels realistic, his running has momentum, his attacks have a wind-up, and there's not a trace of typical JRPG floatiness to him."

"Check it out, business in the front, party in the back.

begins a combo that automatically cycles through three attacks: Crush, your opening strike, Ravage, your main combo flurry, and Vanquish, the finishing blow of the combo. Noctis has many weapons to use, and these are equipped to the attacks to modify your battle style, leading to different builds and tactics for different situations. This is where the demo feels like *Dark Souls* again – attacks have a slight delay and a weight behind each swing. Learning the timing, as well as your enemy attack patterns, is essential for success.

Something surprising that the game does well is build suspense. To raise money to fix the car, the team decides to hunt Deadeye the Behemoth, so they start tracking him down. The next section feels like a *kaiju* movie, complete with giant scary footprints, trees being knocked down in a forest, and a tense scene when the beast is looking for the player in a concrete pipe. The build-up to this boss battle is riveting, and hopefully other battles of this nature are handled with the same care.

After all the waiting and hype for *Final Fantasy XV*, almost nothing could be worth the wait besides the full game. *Episode Duscae* gives players the chance to finally see what the game will be like, but it doesn't go much beyond that. There are only vague hints at the plot, few characters, and none of the beautiful cityscapes seen in the trailers. It only gives a small taste of the game, but it succeeds at showing off what the final game will actually be like. *Episode Duscae* hints at a game that will be far greater than itself, which is exactly what a demo should do. **NAG**

Sand_Storm

▶ Camping plays a large role in the game. Experience points and level-ups are only calculated at camp, and there are options to cook different meals when settling in. The meals give you timed buffs, but wear-out after a few in-game hours. Camping also features a ridiculous product-placement, as all the gear is labelled "Coleman", a real-world outdoor supply company.

or packs, and this sense of scale and life makes you feel like a small part of a much bigger world. In the demo this translates into a lot of hiking, but the final game will have rentable Chocobos and the famous car to make traversal easier.

Actually playing around in these big environments feels worlds apart from any other Square Enix game. Noctis feels realistic, almost weighty. His running has momentum, his attacks have a wind-up, and there's not a trace of typical JRPG floatiness to him. If anything, the gameplay feels closer to a sped-up *Dark Souls* than anything else.

Using that masterful segue, let's talk about combat, because that is what will most likely polarise long-time fans. From the ground up, *FFXV* has been built and billed as an action-RPG, comparable to a more realistic *Kingdom Hearts*. And, despite a few small issues, bashing heads feels more satisfying and intense in *XV* than any other in the series. The main problem is that the demo doesn't fully explain some of the ins and outs of combat, and it'll take some frustrating deaths to learn those. Attacking

Reviews INTRO

Like sands through the hourglass, so are the days of the lives of the *NAG* reviewers. Tirelessly toiling away day after day to bring you only the best in cliché-laden, hyperbolic waffle. Dig around in there and you might find a couple of useful bits of info as well. **Meet your reviewers...**

Q Boss battles: do you love 'em or hate 'em? What's your most memorable boss battle (either good or bad)?

Dane "Barkskin" Remendes
I love them when they're done right. The final battle against the Queen of Hearts in *American McGee's Alice* has always stuck with me. I'm not sure why that is, since there's nothing remarkable about it. Maybe it's the grotesque rain of gibs that erupts when she finally falls. Or maybe it's because of what happens to the Cheshire Cat.

CURRENTLY PLAYING
Battlefield Hardline, Heroes of the Storm, Oddworld: New 'n' Tasty

Delano "Delano" Cuzzucoli
I like boss battles if they're fair and reasonably challenged. I hate boss battles where they spawn lesser enemies just to be annoying. One of my favourite boss battles was Adolf Hitler in *Wolfenstein 3D*. He attacks you in a freakin' mech! It then falls off and you shoot him until he explodes in a pile of gibs.

CURRENTLY PLAYING
Squishy The Suicidal Pig

Geoff "GeometriX" Burrows
I'm not a huge fan of boss battles, unless the game is structured in such a way that they actually make sense from a gameplay perspective. Worst example of this is Emerald Weapon from *Final Fantasy VII*. Timed underwater boss battles? Yuck.

CURRENTLY PLAYING
Heroes of the Storm, GTA V, Legacy of the Void beta

Matt "SandStorm" Fick
Love them, especially Mr. Freeze from *Arkham City*. That's the perfect boss battle in my opinion, testing both the player and the character. Psycho Mantis comes in 2nd, for sheer creativity.

CURRENTLY PLAYING
There is only *Bloodborne.*

Michael "RedTide" James
No emotion on boss battles – they had their place and used to be a great way for halting progress in arcade games. These days they just seem artificial and there because they have to be. Best ones for me ever were the old *R-Type* bosses – always fun and big and different.

CURRENTLY PLAYING
Battlefield Hardline and *War for the Overworld.*

Miklós "Mikit0707" Szecsei
I like them but know they can break the game experience (see *Deus Ex: Human Revolution*). My most memorable boss battles: the fifth and thirteenth colossi in *Shadow of the Colossus* – the two flying colossi. Still incredible battles even by contemporary standards.

CURRENTLY PLAYING
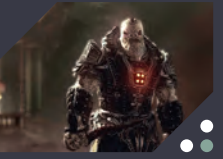*Elite: Dangerous,* and *Skylanders* with my kid.

Miktar "Miktar" Dracon
I love them when they're well designed, having cut my teeth on the likes of the early *Mega Man* games. The Mecha Dragon from *MM2* stands out to me as a well-designed fight.

CURRENTLY PLAYING
Guild Wars 2, Pokémon Rumble World, Bloodborne

Sarah "Bellum" Browne
Love that ish. Probably mostly for the attention to detail in the character design that you usually see more in boss fights than elsewhere in games. Especially in arcade games. I love all the bosses in *Mega Man 5.*

CURRENTLY PLAYING
Mario Kart 7

Tarryn "Azimuth" van der Byl
I love AND hate them, depending entirely on how easy they are. I'm a coward like that. RAAM in the first *Gears of War* is the best ever because RAAAAAAM.

CURRENTLY PLAYING
Dark Souls II, because I'm a masochist like that.

Wesley "CataclysmZA" Fick
I love them! Most memorable for me was fighting Stevens, the undercover villain, at the end of *Syphon Filter 2*. Blasting him back into the helicopter rotors wasn't obvious at first, but it was satisfying to see chunks of him flying around.

CURRENTLY PLAYING
Hawken, GTA V

"You know who also used to make up words? Shakespeare..."

Michael "RedTide" James

"

::: MINI **RE**VIEWS :::

Blood & Glory: Immortals

Blood & Glory: Immortals is different to other mobile Android and iOS games. It's an isometric hack 'n' slash RPG with surprisingly good graphics and gameplay. The story is... a waste of time. It gets so much wrong historically and mythologically that it hurts trying to follow it. It's got ancient Romans and Greeks, and that's all you need to know here.

Playing the game is fun and satisfying, and the touch-screen controls work well. The action is fast and intense, and complemented by good animations and camera work. Missions are tiny, each taking less than three minutes to complete, which works well if you're playing during a coffee break or a commute. There's also a great deal of complexity and depth surrounding equipment upgrades. Items can be fused together to power them up, then evolved into an even stronger piece of gear. Tinkering with the stats will appeal to any RPG fan.

Despite being free-to-play, there's very little to spend real-world money on. Some potions can be bought, but the difficulty curve is pretty low and they won't feel essential. The only real complaint is that completing missions makes you replay some levels as many as five times over. **NAG**
Sand_Storm

SCORE :::

80
Bad story and repetitive missions aside, this game is great fun. It's free and worth the time.

Thinking with Time Machine (mod)

Portal 2's cooperative campaign was a right bit of a lark, but for those of you who for whatever reason could not find a partner to play with, you're probably wondering what all the fuss was about. Well, who needs partners anyway? A clever little *Portal 2* mod named *Thinking with Time Machine* solves this dilemma by providing you with the only partner you'll ever need: yourself.

Unofficially taking place at the end of the original game and continuing the story, the mod once more places players in the protective boots of Chell as she tries in vain to escape the Aperture facility. This time, however, she's armed with a device that can record her actions and play them back, in essence creating a duplicate player which can interact with the environment and carry out complex tasks. And yes, this gimmick is mixed with all the portals, lasers, cubes and Aerial Faith Plates that we've all come to know and love from the original game, creating a proper smorgasbord of sci-fi goodness and abstract puzzle-solving.

Although relatively short, it makes up for its length with fiendish puzzles that require some very precise movements. It also has a fresh, futuristic look and a budding mod community of its own, so if you own *Portal 2*, you need to get this freebie on Steam post-haste. **NAG**
Delano

SCORE :::

85
It's not Portal 3, *but it'll do. For now, at least.*

NAG MUST
PLAY

Bloodborne
From dusk till dawn

I know not why I came to Yharnam. It is an imposing city, suffering the most horrible plague. Gargantuan buildings scratch at the sky and cast the longest, darkest shadows. The city's inhabitants – those not infected or turned beast – patrol the streets with fire and makeshift weapons. I am in a run-down clinic, about to receive a transfusion of blessed blood. A man with bandages over his eyes tells me that once I wake, I can pretend this was all a terrible dream...

UNRELIABLE NARRATION AND YOU

Game director Hidetaka Miyazaki (*Demon's Souls*, *Dark Souls*) is a fan of unconventional narration. Directly inspired by the PlayStation 2 classic *ICO*, Miyazaki explores how a story can be told that is unique to video games. The space between the player's actions and agency, the things left unsaid by NPCs, exploration and examination of the game's environment are parts of *Bloodborne*'s rich and macabre setting. The deeper you dig, the more you play, the more layers peel back to reveal what's beneath.

A horrible lycanthrope made of nothing but blood and bones patrols the deserted clinic. I did not survive the encounter. My death led to my awakening in a strange place. It is the "Hunter's Dream", I'm told by a grizzled man in a wheelchair. Here I can venture back into Yharnam, directly to any lanterns I've lit along the way. There are strange little ethereal creatures trying to sell me healing elixirs and bullets. I have some command of these little gremlins, I can leave messages for other "Hunters" who may come across them. The more I fight, the stronger I get. Certain weapons require me to focus on particular strengths. There seems no end to the horrors I must face.

THE WEAPON IS THE STYLE

Even though *Bloodborne* is in the *Demon's Souls* / *Dark Souls* template, it manages to be its own thing. There is no blocking in *Bloodborne*, combat is a dance of dodging, rolling, and abusing the innovative Regain system: for a few moments after taking damage, counter attacks restore health. The type of weapon you wield determines your play style, playing off the Trick system where every tool is dual natured: a thrusting cane becomes a chain whip with the push of a button and transformations function in combo strings. Faster paced than the *Souls* series, enemies viciously punish poor tactics yet mistakes can be cancelled with Regain.
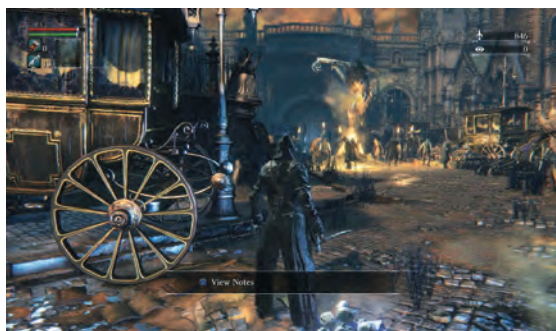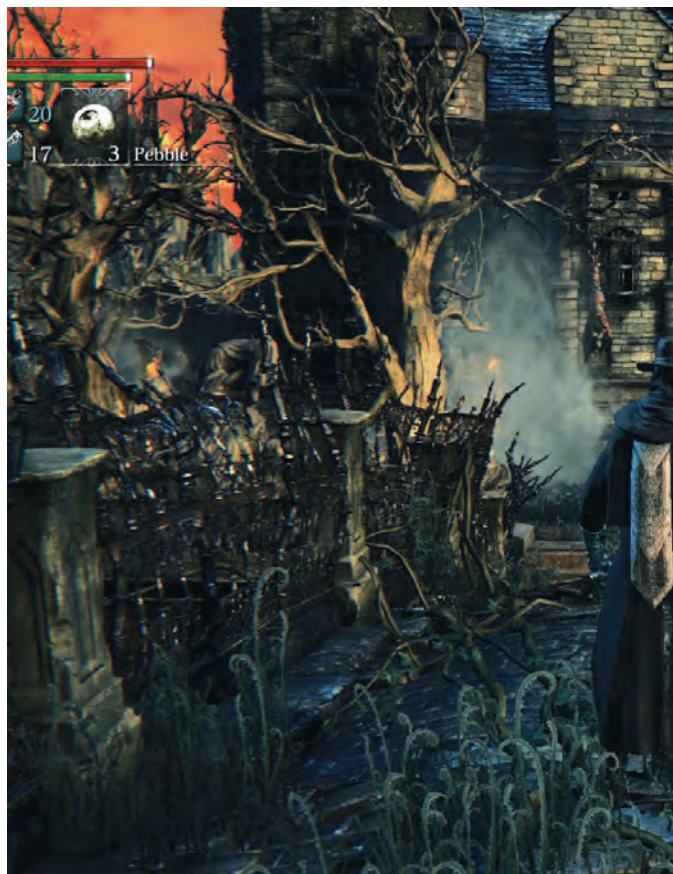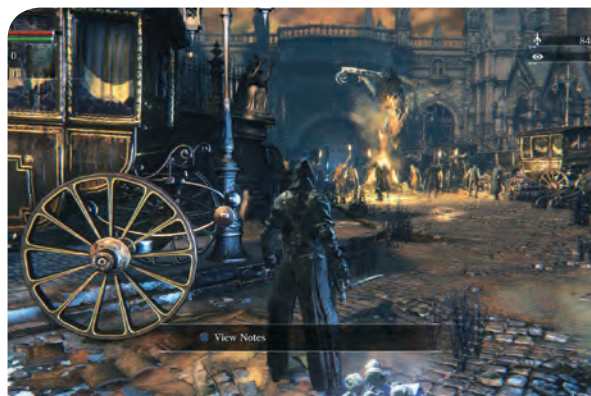
ABOVE / If you're not careful, you can easily get mobbed by large groups of enemies that will flank and snipe you.

On my travels through the city streets, its sewers, and other beast-infested corners, I came across a strange Chalice. By placing this odd receptacle on a gravestone in the Hunter's Dream, I can enter a dangerous realm that seems to change depending on what I place in the Chalice. I can make these realms more dangerous, but will also reap better rewards. I do not yet know the true purpose of the Chalice and the places it takes me.

RANDOMLY GENERATED DUNGEONS

Chalice Dungeons are a big addition to From's formula, allowing the player to create randomly-generated dungeons. You can adjust their settings by using specific items, and the seed may be shared with friends to enable co-op. Dungeons have multiple layers, each punctuated by a boss. The variety of tilesets and way in which they can connect is impressive, but it's unknown how much longevity this system can bring to the game with *Bloodborne*'s relative lack of unique loot.

When I arrived in Yharnam the sun was beginning to set. It seems that with each victory, time passes somewhat. It is now night, and my foes are becoming ever stronger. An odd occurrence caught my attention. I came across the body of a man, his head seemed to glow. By touching the cadaver, I gained some insight into my surroundings. But I fear this might have a terrible consequence. The more I learn about this place, the more horrors seem to surround me. But without the insight of these dead, crazed men, can I survive the night?

INSIGHT, FRIENDS AND FOES.

Insight Points act as currency for buying rare items and invoking multiplayer features like summoning help or invading other worlds. Here *Bloodborne* stumbles. Compared to the glowing signs of past From games, contacting other players is vague. With the ring of a Beckoning Bell another player might be paired with you if they've also rung a bell. They'll spawn in your world where they were in theirs, which can lead to tricky situations due to enemy placement. With a lack of visible summon sigils, there is no way to determine hotspots of activity leading to slow matchmaking and wasted Insight. Yet you want to stockpile Insight. The more Insight you have, the more your character becomes attuned to the eldritch horrors that roam the streets. Previously invisible enemies become visible and when you can see them, they can see you. Insight also reveals plot-related elements. The guttural murmuring of a giant crazed beast might be incomprehensible the first time you hear it, but with enough Insight you can start to understand what they are saying.

I do not know how many times I have died. Why did I come to this accursed city? Another Hunter turned into a feral beast right before my eyes, I had no choice but to put them down. Is that what fate awaits me? **NAG**
Miktar

SCORE

89

In some respects, Bloodborne *reminds me of* Nocturne (1999). *While it's very much an action game, combat-heavy and challenging, it also feels like a good interpretation of the survival horror genre. You can fight, but you're never 100% safe. Even with its flaws,* Bloodborne *is an excellent (if a bit niche) experience.*

➕ Impressive level design / Refined combat / Plenty of content

➖ Frame rate and loading issues / Vague online functionality / Needs some patching

Battlefield Hardline

Good cop, bad Battlefield

You've seen it all before, a main character with a cut and paste backstory, the new disapproving partner, the double cross, and the flamboyant villain. *Battlefield Hardline* feels like it dipped its tea bag into every pot before presenting the player with around eight hours of "police work". The game dynamic is about stealth and shooting (including using a tank) with a few superfluous police actions here and there to make it all feel like a cops and robbers game.

The single player isn't bad, and although the campaign is short some of the characters feel real and you do kind of care about how things will turn out. If you approach this with the same tongue-in-cheek attitude that was clearly used

when putting it together you're going to enjoy it. Unlike many other shooter games you can use stealth to avoid the enemy vision cones and flick bullet casings to distract them while sneaking past them. If they don't see you then press G to flash your badge, and arrest them – effectively removing them from the map. Going quiet or loud is primarily dictated by the level of difficulty you play at (or your preference), and because the enemy isn't that smart it's easy to clear an entire level without firing a single round. If you play Hardline mode (accessible after finishing the game) then going in quiet is sometimes required as arresting a single enemy will take the overall pressure off if you screw up and bullets start flying. But this is *Battlefield*, why are we sneaking around instead of

> **ABOVE /** Okay, it's got a little *Battlefield* in it, but why is there a tank in a cop game?

THEY'LL NEVER TAKE ME ALIVE

Battlefield Hardline's multiplayer is loads of fun. If you're looking for a game that'll let you strap explosives to a police motorcycle and use it as a mountable RPG, it'll do that. But there's something not quite right with *Hardline*, and I've been struggling to resolve what that something is.

I think it's all to do with the fact that it's called *Battlefield*, because it shouldn't be. The *Battlefield* name brings with it a flood of insurmountable expectations, and while Visceral's done a great job taking the general feel of Battlefield and slapping a cops-and-robbers theme on it, it's not quite enough. It's missing the chaotic majesty of your typical Battlefield game. It's still a frantic multiplayer experience, and the carnage that occurs through the course of each match is almost as compelling as ever – but it doesn't rival the raw, varied intensity of a true *Battlefield*.

To me, *Battlefield* is planes screaming overhead, loosing ordnance on a pair of helpless tanks while an AA gunner tries in vain to halt the aerial barrage. *Battlefield* is the passenger of a plucky jeep managing to send a chopper's crew ploughing into a crumbling building with a lucky shot from a rocket launcher. *Battlefield* is about filling a vast multiplayer sandbox with volatile toys, and giving players the keys. I've always felt that the series is at its weakest on maps where infantry combat becomes the focus, because it's most interesting when all its havoc-enabling systems are in play. *Hardline* strips away much of what makes the series shine, and replaces it with something tamer, something more predictable. It's less about wild experimentation, and more about simply running around with a gun making things die – and we've got other games for that.

Setting aside a few flaws, it's an expertly crafted experience overall. The new game modes are well designed, with Hotwire being an obvious favourite since it's essentially Conquest on crack. The vehicles, although lacking in variety and featuring some hilariously janky physics, are fun to use and ensure that the *Battlefield* spark, while muted, is still present. Very clever workarounds are in place to ensure that the game is balanced around the cops versus criminals theme (like the fact that you can't simply spawn with a rocket launcher), and the unlock tree is satisfying enough. I've had a great time playing it, but I don't see it getting its hooks in me the way *Battlefield* has in the past.

Barkskin

bailing out of a jet and sticking C4 under a camping sniper? Truthfully, the *Battlefield* name is really just a way to ensure people buy the game but it has nothing to do with anything that made the franchise so popular. It's not a *Battlefield* game but in trying so hard to please everyone it fails and the overall package is weaker.

It's a mixture of good and bad and considering Visceral should know what they're doing it's hard to understand why you can't even press escape to skip the cut-scenes. Another niggle is the artificial boundaries on the map. You're very strictly guided from objective to objective and while you can, most of the time, choose a different approach into enemy territory, you can't stray too far afield when getting there. This then further irritates if you open a door into a new part of the story. You can't ever go back where you came from – so if you've missed something (like evidence or the opportunity to handcuff a bad guy) you'll have to play the whole level over again. For people who like getting 100% completion, this one is going to challenge your patience. But let's not get this wrong, it's not terrible but could have done with a little more finesse and thought and care. It certainly doesn't fit into the *Battlefield* line-up, but what it's called isn't that important as long as you have fun, right? The multiplayer mode is detailed by Barkskin, but briefly it's really just a short-range engagement shooter

played out on a very big map. Hotwire is a fun game mode but lack of variety and the fact that you can just drive in huge circles makes it limited. The other game modes are inventive and effectively focus the gunning action around objectives, so points for that. After all is said and done, while it's enjoyable to play here and there, *Battlefield Hardline* really more of a miss than a hit. **NAG**

RedTide

SCORE

69

This is a fun game that is well written, acted, and put together. It might not be a Battlefield *game, but what it does do it does with flair and style, and leaves you wanting a sequel to see what happens next. Let's hope the developers take all the feedback to heart and make part two the smash hit this could have been.*

+ Plenty of fun / Fresh modes / Competent multiplayer experience

– It's not *Battlefield* / Inescapable cut-scenes / Replaying is a chore
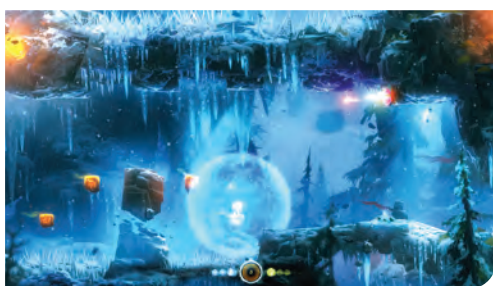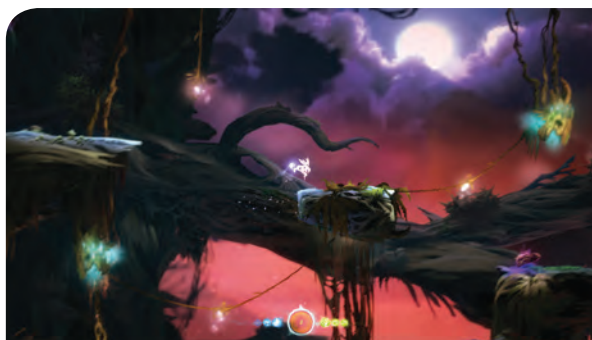
NAG MUST PLAY

Ori and the Blind Forest

Tripping the light fantastic

In the dreamy opening moments of the game, we're introduced to Ori, a sort of rabbit thing and our hero, and Naru, a sort of bear thing and also Ori's adopted mommy. Like paging through a children's book come to vivid life, we watch Ori and Naru's story unfold in a series of charming adventures around the watercolour woods of Nibel. And then, everything changes. I won't spoil what happens except to say that owls are assholes, and now it's up to us to save the world.

A word of warning, though – under its whimsical veneer, *Ori and the Blind Forest* is hard. Like, *hard*-hard. In fact, for the first time ever, I had to employ the occasional (okay, maybe even a bit more than "occasional") assistance of my fiancé to finish some parts of the game for me. I know, I should probably be fired for such egregious incompetence, but I'm also the only person in the office who can translate Latin, so I suppose they cancel each other out. The point is, if you're easily infuriated by games that require precision and timing and an indomitable sense of determination to get up and go on in the midst of overwhelming adversity, this is not the game for you.

For everybody else, there's a save system that lets you drop "Soul Links" – checkpoints, basically – for every collectible blue orb you've managed to find so, you know, find them fast.

Much like other "Metroidvania" games before it, *Ori and the Blind Forest* is mostly open from the start, and travel from one place to the next is limited by the abilities you've unlocked. If you can't get somewhere now, you'll be able to get there later on when you come back, triumphant, with a triple-jump or bash. The only exceptions to this rule are the three main "dungeon" areas, which for arguably unnecessary narrative reasons you can't re-enter once you've completed them. That's rather a shame because if you miss a collectible, you can't go back and get it without restarting the whole game. Also, when you've finished the game, you can't restore a previous save and carry on exploring and there's no New Game+ mode – so make sure you've seen and done everything before that.

But it's an insignificant complaint about a game that's otherwise so brilliantly put together, it's already a classic in the genre.

The level design is superb, the orchestral score is wonderful, and the graphics are absolutely mesmerising. So many times, I was distracted from what I was doing and simply… stared. And then died, obviously, because I just jumped onto a heap of stupid thorns and now Gareth has to do this bit for me. **NAG**

Azimuth

SCORE :::

90

With its spectacular, poignant presentation and humbling difficulty, **Ori and the Blind Forest** *is one of the most astonishing and instantly unforgettable games of this generation, and an auspicious debut for Moon Studios.*

➕ Extraordinary visuals / Simple, emotionally evocative story / Clever save system

➖ SO HARD / No post-game exploration

Deathtrap

The unholy offspring of *Dungeon Defenders* and *Diablo*

If you're at all familiar with NeocoreGames' previous titles, you'll have a pretty good idea of what to expect from *Deathtrap*. Indeed, it bears more than a passing resemblance to some of the mechanics presented in their *The Incredible Adventures of Van Helsing* games, particularly the tower defence facsimiles.

The game is a dark fantasy affair in which a mystical core requires protection from all manner of otherworldly fiends, and it's up to you to ensure that nothing defiles it. Gameplay is separated into rounds, with each round featuring a warm-up session in which players can survey the map, determine the path of enemies, make use of teleporters and lay traps accordingly.

While it may sound like your typical tower defence, there are a few notable exceptions. Far from playing a passive role, you'll be able to hop in on the action and aid your traps and towers as they whittle down the oncoming forces, much like *Orcs Must Die*. From the beginning, players choose one of three classes, each with their own respective weapons and combat style. As you dispatch
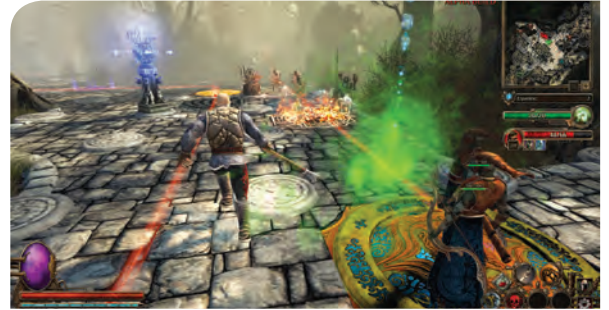
ABOVE / Come right up to this ledge. Come on. I double-dare ya, suckers!

the assorted abominations, you'll earn "essence", which is the game's currency that aids you in building and upgrading your defences and character statistics. This, combined with raiding loot, magic spells and optional side-objectives, gives the game a considerable RPG element.

There are a few let-downs, sadly. Though gameplay is fleshed out with the aforementioned RPG elements, it nonetheless falls back on more simplistic tower defence tropes. The most obvious of these is the inability to properly "path" enemies; for those not in the know, this entails building obstructions which lengthen the attacker's route and keeps them in the firing range longer. In addition, the visuals and audio are rather weak, invoking the feeling of stock resources rather than proper, well-crafted pieces of presentation.

Still, it's incredibly fun to play, with an interesting single-player experience that can easily be expanded upon with third-party maps. The multiplayer side is ambitious, featuring cooperative play in which up to four players can tackle the main campaign together. There's also a PvP mode where one player can take on the role of attacker and the other of defender. It's fun, but the network code is

still a bit buggy; hopefully future patches will address this.

It's tempting to recommend this to RPG fans, but it is most fundamentally a tower defence game, aimed towards that particular demographic. If you can look past the cumbersome interface and odd bug, you'll find a surprisingly rich and engrossing game that will easily be ranked among the greats of the tower defence genre. And with continual updates, it's getting better all the time. Forget *Plants vs. Zombies* and get this instead! **NAG**

Delano

SCORE

75

It may be a bit rough around the edges, but Deathtrap *is still one of the better tower defence games.*

➕ Plenty of replayability / Great blend of RPG and tower defence elements

➖ UI is a bit clunky and confusing / Graphics and sound lack polish

White Night

Leaving players in the dark since the 1930s

White Night is a noir-inspired 3D adventure and exploration game that harkens back to the 1990s and titles such as Resident Evil and *Alone In The Dark*. Placing players in the shoes of a stereotypical hard-boiled detective in Depression-era America, the main character is consigned to spending the night driving alone and contemplating the abysmal state of a once-great world power. He sees a ghostly figure on the road and swerves to avoid it, only to crash his car and injure himself badly. Finding an old mansion, he attempts to go inside in order to seek help and first aid, but things gradually get creepier and take on a paranormal edge as he explores his situation and realises there is more to the old establishment than meets the eye.

Not unlike *Amnesia: The Dark Descent*, light is your fundamental form of defence. Unfortunately, our hapless detective needs to rely on matches,

⌃ ABOVE / If you're not careful, you'll soon find yourself a permanent resident in these parts.

⌃ ABOVE / Hmm. Stumbling in front of a dark and ominous gate. What could possibly go wrong?

which have the habit of burning out as well as being in short supply. I won't spoil any surprises, but suffice to say, finding yourself in the dark will seal your fate in short order. The bulk of the game consists of managing your matches, walking from one room to the other, solving odd, simple puzzles, figuring out how to light up dark areas and picking up letters and papers which gradually unravel the game's plot and back story.

The most striking feature of the game is the art style. Almost completely devoid of colour, the title makes extensive use of high-contrast, inverted black and white imagery with a slight film grain that gives the entire affair a gritty feel. Sometimes it can be difficult to make out specific details, but that appears to have been the developer's intention; the theme of keeping players in the dark, quite literally, is prevalent throughout, what

with the limited line-of-sight and fixed camera angles. The game also skilfully makes use of ambient noise to maintain tension, reminding players that there's still a lot going on past their field of vision. Speaking of audio, the detective easily matches Max Payne's gritty style of monotone monologues, but it really works well and the voice-acting is superb. There is very little music, but the odd inclusion of old-style jazz is really appropriate and helps to remind players of the game's 1930s setting.

The game is an engrossing experience that runs at a little over five hours and gives players plenty to be paranoid about. It's not easy to scare gamers these days, but *White Night* manages to be thoroughly unnerving with its excellent use of atmosphere. Fancy yourself a horror fan? Then get this. **NAG**
Delano

SCORE ⠿

78

Highly atmospheric and stylish, **White Night** *is a great tribute to the original 3D survival horror genre.*

+ Highly atmospheric and creepy / Great art style and voice acting

− Pacing is initially sluggish / Occasional cheap deaths

The Escapists

These four walls of mine

You've been caught by the fuzz and tossed in a jail cell for being A Bad Person. There's only one way forward in a situation such as yours: do whatever it takes to escape. Drawing obvious inspiration from ZX Spectrum classic *Skool Daze*, *The Escapists*' primary premise is straightforward – you've been placed within the confines of a prison's walls, and you must carefully devise a method that'll see you earn your freedom long before you've served your sentence. And while that may seem simple enough, players who are patient enough to unravel the game's network of systems will find a surprisingly deep sandbox RPG that offers myriad solutions to its central dilemma.

Every day you spend in your virtual prison is governed by routine, and working around your strictly regimented time is part of the game's challenge. Every morning, there's roll call. After that, it's breakfast time. There are set periods for exercising and showering, and so on. You'll have to work one of several prison jobs (like doing laundry, or delivering mail to prisoners) if you hope to earn extra cash that'll be helpful in preparing your escape. You'll be given periods of free time, but they don't present nearly enough of an opportunity to get anything substantial done. Being caught avoiding your prescribed activities arouses suspicion; do it one time too many and you'll be punished by the prison's guards.

There's a social aspect to the game as well: over time, prisoners develop rudimentary relationships and rivalries emerge. Fights often break out between soured inmates, and you might find yourself on the receiving end of a beating if you cross paths with people you've angered. Do favours for your fellow convicts and you'll earn their respect, along with cash that can be used to buy useful items, bribe guards and more. Items can be combined to create various tools and weapons, and discovering the recipes for the game's many and varied objects is part of its appeal. Some recipes can be easily surmised – like combining a bar of soap and a sock to create a sock mace. Others are infuriatingly illogical, sometimes requiring frustrating trial and error to generate seemingly self-explanatory objects.

The entire game is actually an exercise in trial and error. It's about discovering flaws in each of *The Escapists*' various
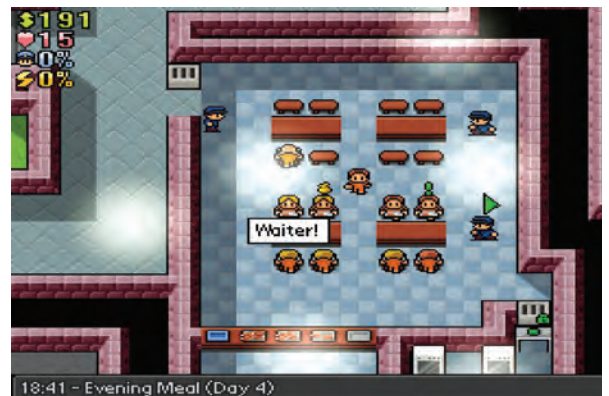
^ ABOVE / Most actions in the game (like surfing the Internet to improve your character's intelligence) generate fatigue. Fatigue can be reduced by eating, sleeping and showering.

prisons (all of which present their own distinct challenges and opportunities), learning to cover your tracks after being thrown in solitary and having your illegal items confiscated because a guard discovered that an air vent was missing in your cell, and eventually finding the perfect moment to execute your (probably flawed) plan. The charming pixel art aesthetic belies the game's serious subject matter, and while they're perfectly functional, the crude visuals make it difficult to differentiate between different characters and details at a glance. It's at times a monotonous experience, and one that's riddled with small irritations – but be patient with it, and you'll find a satisfyingly rewarding, very replayable sandbox within. **NAG**

Barkskin

18:41 - Evening Meal (Day 4)

SCORE :::

70

The Escapists' *core concept is intrinsically compelling: escape by any means necessary. Its deceptively simple but effective premise is echoed throughout the game's design, and although it can become repetitive (especially since many of its mechanics are rooted in routine), it's nevertheless a unique sandbox experience that's loads of fun.*

+ Cleverly designed sandbox mechanics / Highly replayable

– Can become monotonous / Pixel art aesthetic causes confusion
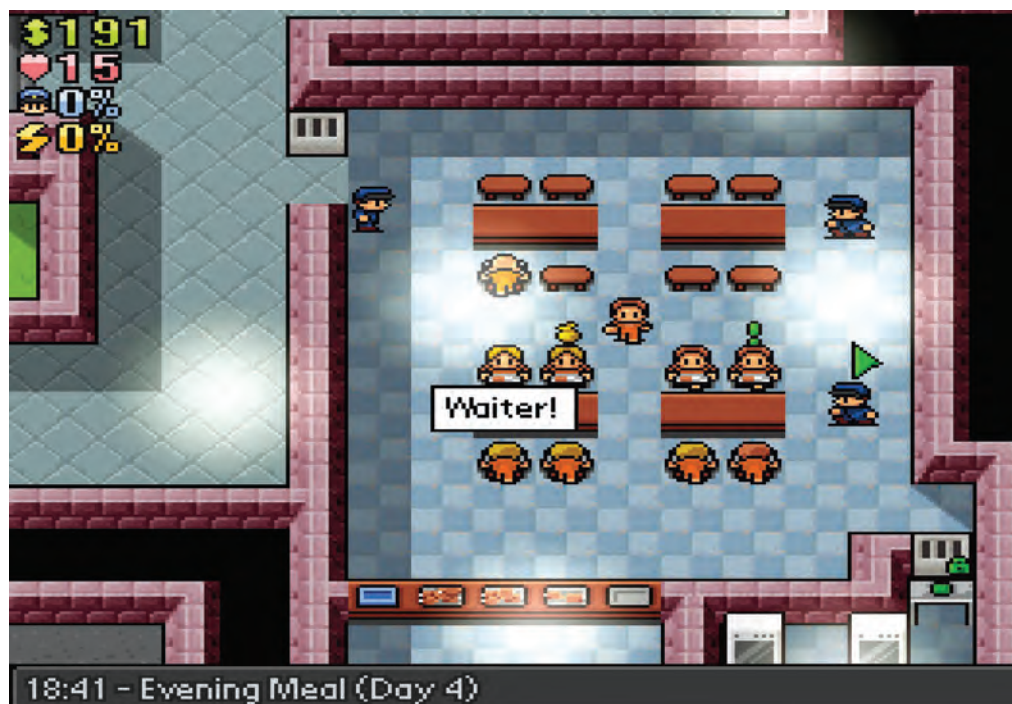
Zombie Army Trilogy

Made for co-op, charging for co-op

First up, the title needs a bit of explaining. It's a series including the remastered *Nazi Zombie Army* and its sequel, as well as a third new episode, but there really isn't much different about each. They really may as well have just smooshed it all into one title with three parts. The term "trilogy" makes you think you're getting three separate and different games in one. You aren't. That being said, it's nice to have 15 different missions to choose from at any time, even if they are all very similar; you certainly get your money's worth in that regard.

The story is perfunctory, which is fine if all you're looking for is to be led to your next target. On that note, killing zombie Nazis (and other demonic types) is fun! They really have put most of their focus on the killing dynamics, giving you major satisfaction in ridding the world of this undead scourge. The return of the

X-Ray Kill Camera and the slow-motion bullet tracking makes long range head shots feel awesome. You really don't tire of it too soon. You can also be pretty darn tactical about everything in your mission. You can choose your weapons from a historically accurate arsenal, as well as plant landmines, lob grenades, set your own traps and trigger others. You'll also want to be ultra-vigilant: visual and audio cues are limited. If you're an experienced virtual marksman, you'll be glad to know that the difficulty levels go pretty darn high (x4 on *Sniper Elite* difficulty, anyone?), but beginner bullet-flingers can ease themselves into the sniping business.

Problem? If you really want to get the most out of the game, you'll want to play co-op. You can only do that online. This really is a great pity because it's perfect for some good old couch co-op. The inherent merit of the game itself may not warrant purchasing multiple copies for multiple

TOP / Mmm, gore-tastic X-Ray Kill Cam.

devices, just to play it the way it was designed to be played. After a couple of days of solo zombie-sploding, you'll miss your friends, you'll miss having allies. You'll want them around but you also can't just invite them over to join you. If you have the kind of friends that will buy and play this with you, then hey, great game. Horde mode for days! You will play it a lot and you will be happy. If you do not, you might get sad and lonely and look for a place to sell second-hand games; or you'll just become such a l33t sniper that you'll slay everyone you co-op with in all shooters ever and make them rue the day they didn't buy this to play with you. **NAG**

Bellum

RIGHT /
A great addition is the four new female characters. It may not make too much of a difference once you're actually in the game, but it's good to know they're listening.

SCORE ⋮⋮⋮

70

A fun shooter that requires online co-op to get the most out of it, which is kind of annoying. But hey, it's not every day a proper tactical shooter packed with gore and detail and undead dudes comes along; and co-op really is the business. So if that's what you've been waiting for, well, here it is.

➕ Great co-op / Killing zombies is satisfying
Fun landscapes / Good boss fights

➖ Relies on co-op / Little variation across missions / Poorly structured

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TPNtechnology

MOSH *Pit*

Want to expand your geek lifestyle with loads of cool stuff every month? Our monthly Mosh Pit guide is all you need.

◈ Astrum
LED Wireless
Speaker ST230

- ❱ **SUPPLIER** Astrum Peripherals
- ❱ **WEBSITE** www.astrum.co.za
- ❱ **RRP** R649

Wanna listen to all those pumping beats that you have on your phone AND have a mini disco in your room? The ST230 Bluetooth speaker is your go-to solution. Sporting five multi-coloured LED lighting themes that can also be setup to match your music for up to four hours of continuous play, the Astrum LED Wireless Speaker can connect to any of your mobile devices via Bluetooth.

❱ Thrustmaster T300
Ferrari GTE Wheel

- ❱ **SUPPLIER** Megarom
- ❱ **WEBSITE** www.takealot.com
- ❱ **RRP** R6,599

Looking for a high-precision force feedback racing wheel for your PC, PS3 or PS4? The Thrustmaster T300 Ferrari GTE Wheel comes with a set of fully adjustable metal pedals and is equipped with the official PlayStation 4 buttons (PS, Share, Options). The attachment system is compatible with all mounts and the 11" wheel is a replica of the Ferrari 458 wheel with a full 1,080 degree rotation.

Airsoft HQ accessories

- **SUPPLIER** Airsoft HQ
- **WEBSITE** www.airsoft-hq.co.za
- **RRP** R235 (eyewear) / R970 (helmet)

If you're going to look the part of a war hero, you might as well do it with equipment that will actually keep you safe.

This hard plastic helmet includes padding on the inside to prevent your noggin from getting smacked around, a rugged chin-strap to keep the thing on said noggin, and even a mount for your NVGs (that's Night Vision Goggles to you non-combatant scrubs).

But what's the use of protecting your head if you've been blinded by a stray BB pellet? Nothing, that's what. So you need some ballistic eye protection to keep your ocular bulbs intact and combat-ready. These specs give you the option to swap out the arms for a head strap, and are designed to reduce eye strain caused by that pesky ball of fire in the sky.

Police Diamondback watch and Daxter bracelet

- **SUPPLIER** CJR Gift Sales
- **WEBSITE** www.cjr.co.za
- **RRP** R2,395 (watch) | R795 (bracelet)

The bold new collection from Police includes the Diamondback watch and the Daxter bracelet. This new range of modern designs exhibits dangerous curves and confident lines. The watch is made from black ion-plated steel with a black leather strap and a silver dial, and the bracelet features a 200mm woven black leather strap with a silver band.

MSI GT80 2QE TITAN SLI

- **SUPPLIER** MSI
- **WEBSITE** www.corex.co.za
- **RRP** R67,999

MSI has done it again and released the GT80 2QE TITAN SLI, with performance that is unparalleled by any other notebook to date. It features two GTX 980M GPUs, a full mechanical keyboard with Cherry MX Red switches and a touch sensitive numeric keypad amongst other things. Add four SSDs to the mix in RAID 3 and you have a recipe for what is easily the fastest notebook money can buy. In synthetic tests it delivers higher performance than a desktop NVIDIA GTX 980 or TITAN Black. With 4K support and upgradability built into its design there isn't a more powerful notebook you can find anywhere else. If only the most powerful will do, this is the gaming notebook for you.

Minecraft foam iron sword

- **SUPPLIER** Techfixplay
- **WEBSITE** techfixplay.co.za
- **RRP** R390

Real life stuff based on popular video games is all the rage these days. From elaborate LEGO creations to plush toys you can snuggle with at night, if you play it on your console, PC or mobile device, you can probably buy it for real somewhere. On offer here is the iron sword from *Minecraft*, made out of EVA foam. That's ethylene-vinyl acetate foam, which means it's stronger than you think and therefore more durable which really just means it won't come apart after your first mock creeper battle. The foam sword is 60cm long and is the perfect accessory for that hastily thrown together Halloween costume – or even as a prop in your online video debut. Don't worry, Hollywood probably just typed your email address in wrong.
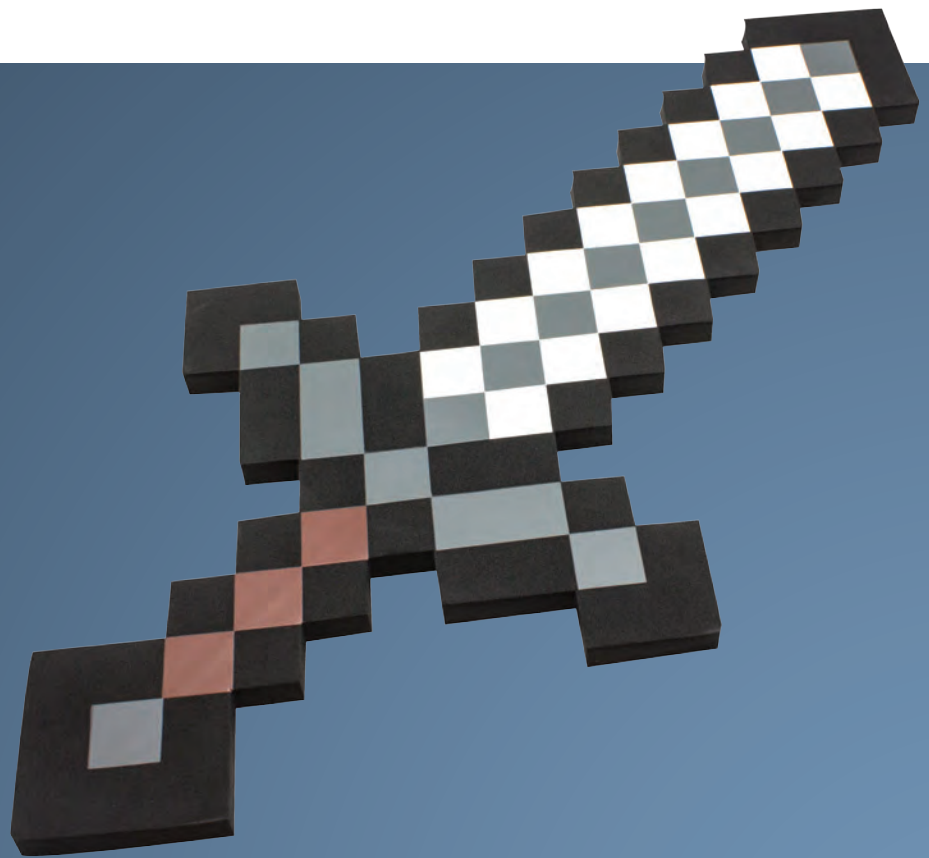
Minecraft Creeper vinyl statue

- **SUPPLIER** Techfixplay
- **WEBSITE** techfixplay.co.za
- **RRP** R440

In the video game kingdom this is probably the most terrifying enemy ever (if you play survival mode that is). There you are mining for diamonds, you stop, you hear a weird hissing sound and boom, it's too late, all your stuff is spread around the map and you're just a pleasant memory. This vinyl statue comes with a plastic diamond block in the box and looks great on any desk. The head swivels around and some of the NAG testers swear that the head followed them around the room but none of this could be proven. It's 15cm tall and weighs about the same as a TV remote control for those who like all the details.

Necklaces, rings and things

- **SUPPLIER** Techfixplay
- **WEBSITE** techfixplay.co.za
- **RRP** R50-200

This is a bit of a mixed bag of goodies and also a subtler way of letting everyone know you're a serious gamer. The world is divided into two types of gaming nut. You're either running around Sandton City with a 60cm long *Minecraft* foam sword yelling, "die creeper" to people in green hoodies or you're wearing a God of War necklace. Cosplay is a whole different thing that we're not talking about here, but this is how it starts. Each of the rings and necklaces are made out of shiny metal and weigh what you'd expect them to.

Batman: Arkham Knight #1

- **SUPPLIER** Cosmic Comics
- **WEBSITE** www.cosmiccomics.co.za
- **RRP** R55

This is the comic you want while you anxiously wait for the final part of the *Arkham* trilogy. *Batman: Arkham Knight #1* fills in a few blanks and sets the scene for the next game while fleshing out the world with extra character details and happenings. It's been put together with the care and style you'd expect from any of the core *Batman* comics, making it perfect for all fans of Bats, not just the latest video game incarnation.

Howard the Duck #1

- **SUPPLIER** Cosmic Comics
- **WEBSITE** www.cosmiccomics.co.za
- **RRP** R55

Those of you with a keen eye or knowledge of comic book history shouldn't be surprised to see a return of Howard the Duck, following his brief but well-received appearance in *Guardians of the Galaxy*. Now with his own comic series, this blast from the past is as old-school as he is uncouth, and sometimes that combination is just what's needed to get things done. It's a well-made start to the series with its snappy dialogue and expressive, if somewhat simplistic, art style.

Mortal Kombat X #1

- **SUPPLIER** Cosmic Comics
- **WEBSITE** www.cosmiccomics.co.za
- **RRP** R55

DC shows its Warner Bros. ownership with this game tie-in. Perfect for major fans of the series or anyone looking to expand their knowledge of *Mortal Kombat* lore, this first issue shows us some of the lesser-known (or more likely, recently created) backgrounds of a few characters from the game series. Like everything *MK*, take this comic with a couple of pinches of salt and don't read too much into it: this is lighthearted entertainment with the writing and art style to match.

Star Wars #1

- **SUPPLIER** Cosmic Comics
- **WEBSITE** www.cosmiccomics.co.za
- **RRP** R55

As odd as it feels to read anything new with the *Star Wars* name on it, it's exciting to know that the next bunch of films and tie-ins is on the way. This first issue of the new *Star Wars* series of comics sets the scene for things to come, and relishes in the original *Star Wars* film tropes, with just a smattering of that "other" trilogy's modern sensibilities. The realistic style of art might not appeal to everyone, but it's impossible to fault the artistic merit at work here. If you're even remotely interested in the upcoming films, you need this.

❯ POP! Rides: Turtle Van

❯ **SUPPLIER** Cosmic Comics
❯ **WEBSITE** www.cosmiccomics.co.za
❯ **RRP** R499

The box includes Michelangelo holding a slice of droopy pepperoni pizza which is a bonus considering the van itself doesn't feature any movable or openable parts, even the wheels are solid. There's plenty detail here but that's about it. For the price this falls into that great cop-out category… for extreme (and rich) collectors only.

❯ League of Legends vinyl figures

❯ **SUPPLIER** Techfixplay
❯ **WEBSITE** www.techfixplay.co.za
❯ **RRP** R330 each

You didn't think a game as outrageously popular as *League of Legends* would let a good merchandising opportunity pass it by, did you? These super-cute vinyl figures depict a range of champions from the much-loved MOBA, and they'd make an adorable addition to any hardcore fan's figurine shelf or computer desk.

We got our paws on five of the figures (Lee Sin, Teemo, Ahri, Thresh and Vi (aka The Piltover Enforcer)), and while they don't all manage to perfectly capture their champion's likeness (potentially leading to some momentary confusion as to who's who), they're all close enough that you won't care in the slightest. Plus, *they're just so damn cute* and Teemo's an automatic winner. Each figure stands around 12 to 14 centimetres tall and comes with an attachable base. Buy them all and you'll always have them by your side to comfort you and soak up your tears when a game of *LoL* isn't going your way.

HARDWIRED

The Suspect World of Online Reviews

In the world of web enabled devices, where virtually every electronic piece of equipment can connect to the Internet, information flows in an unprecedented manner. From just about anywhere you may access the web, and for the plugged in technocrat that is a watch, tablet, smartphone or phablet, notebook, desktop, console, TV and perhaps even their set top box. With some clothing brands connectivity has managed to reach trainers as well.

With the abundance of connectivity options we now have access to all kinds of information which was previously reserved for the elite, those in special circumstances and those with the right connections. This is particularly true when it comes to reviews of games, hardware, peripherals and just about any form of entertainment. Theoretically then information should be better, more authentic and subject to rigorous testing and the highest quality testing methods. Unfortunately this is anything but true. In fact things have become rather dire in the world of hardware reviews. Game reviews have taken on a different life on the web and they too have suffered because of the sudden rise of video reviews as opposed to the written word. However, there is merit in the ability to see a game in action in addition to reading the written review as well. With hardware and peripherals however, this is not the case. When there was once a time any piece of hardware had to be tested in very strict conditions, repeatedly, it has become a free for all with a race to the bottom.

It's become a worrying trend where hardware reviews are carried out in conditions that vary too much, and many reviews do not reflect the real world performance, application and more importantly are easily falsifiable. For instance at least three major websites covered the GTX TITAN X at launch. As usual there were plenty of graphs and game benchmarks for us to take in – graphics cards going as far back as the GTX 680 right up to the latest and greatest TITAN X of course. The issue with all of these reviews was that the performance of the AMD Radeon HD 7970, for instance, was measured at release time way back in 2013, and those results were never updated. That is, the results are two years old, taken from the very day the HD 7970 was released. Between that time and now there have been at the very least 20 driver updates and performance is significantly different than it was at the time of release. Moreover in the more recent graphics cards, where they were re-tested, the results are nonsensical. For instance, a GTX 770 (reference model) delivering better frame rates at 1920x1200 than it does at 1920x1080 with significantly newer drivers. Not an isolated case, but in every tested title and synthetic benchmark.

That could only mean a finite number of things, such as careless testing, a change in the test environment, tempered test results or even worse and likely the case, guessed results. I say this is likely the case because, while one may argue that the test environment may have changed convincingly, when running resolutions of 1920x1080 with 4x MSAA, most performance is GPU bound. If that isn't a compelling enough reason to be suspicious of the results, consider that this discrepancy shows up as well at 3840x2160 (UHD/4K) which is ever more GPU centric to the point where a lowly AMD APU 7850K will deliver the same frame rates as a Core i7 4960X. Yet, the results with the same graphics card over the course of 12 months varies in favour of the older results with older and slower drivers.

Newer drivers may not improve a fill-rate/bandwidth and compute limited situation, but they certainly would not make the results worse as is the case here.

However one looks further on and realises that because being online is essentially a competition of who is going to be first with a review, it encourages that kind of writing and shortcut taking. The saddest thing about it is that as I've looked further into this, it seems to have been taking place as early as 2010.

There's plenty more I want to say about this issue, but I've run out of word space here. I will however continue with this in the next issue and Windows 10 and all related things will have to wait. This is important and it is something that you, our readers, can go and take a look at for yourselves to verify my claims. Until next time, be vigilant of what it is you're reading on the 'Net. Do a simple check and compare any two reviews with components that show up in each and examine the anomalies and inconsistencies. I guarantee you'll be surprised at what you find. **NAG**

> "Theoretically then information should be better, more authentic and subject to rigorous testing and the highest quality testing methods. Unfortunately this is anything but true … things have become rather dire in the world of hardware reviews."

PSU

Corsair AX1500
R5,699 / www.corsair.com

GRAPHICS

EVGA GTX 980 Classified
R10,870 / www.evga.com

OS DRIVE

Intel 750 1.2TB PCIe
R14,999 / www.intel.com/ssd

NEW

STORAGE DRIVE

WD Black 4TB FZEX
R3,199 / www.wdc.com

CHASSIS

Corsair Obsidian 900D
R4,599 / www.corsair.com

DISPLAY

BenQ XL2430T Gaming Monitor
R6,399 / www.benq.com

KEYBOARD

Razer BlackWidow Ultimate
R1,899 / www.razerzone.com

COOLER

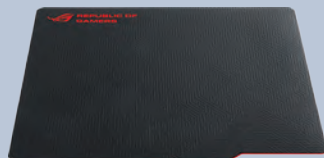**Cooler Master Nepton 280L**
R1,499 / www.coolermaster.com

MOUSE

GAMDIAS Zeus gaming mouse
R869 / www.gamdias.com

MOUSE PAD

ASUS Whetstone
R469 / rog.asus.com

SOUND

Creative Sound Blaster ZxR
R3,599 / www.soundblaster.com

HEADPHONES

HyperX Cloud
R1,499 / www.kingston.com

INTEL

Intel Core i7 5960X
R13,999 / www.intel.com

+

MSI X99S XPOWER AC
R5,999 / www.msi.com

+

Corsair Vengeance LPX DDR4 2,800MHz 16GB Kit
R5,599 / www.corsair.com

AMD

AMD FX 8350
R2,999 / www.amd.com

+

ASUS Crosshair V Formula-Z
R3,699 / www.asus.com

+

Corsair Vengeance Pro 2,666MHz C11 16GB Kit
R3,899 / www.corsair.com

R80,996

R65,996

NAG DREAM
MACHINE

NAG
HARDWARE
AWARD

Corsair Vengeance K95

SUPPLIER > Rectron   **WEBSITE >** www.corsair.com   **ERP >** R2,799

T he Vengeance K95 RGB, as the name suggests, features three colour LEDs for every key, which means you can have any backlight key colour or combination you desire. There are literally over 16 million colours to choose from and that automatically means the K95 is compatible in light aesthetics with anything you may place next to it. A key feature, and one that's easily managed thanks to Corsair's comprehensive control software. It's easy enough to configure if you want basic lighting options, but allows detailed and complicated lighting schemes that we could write a small book about. It really is that detailed, but it does not get in your face about it, making simple colour switching child's play. This simplicity extends to the macro management system as well. With 18 dedicated macro keys and three profiles including a shift function you can switch between, there's effectively 108 macros for you to save should you so wish.

Configuring these macros is always going to be detailed, but fortunately Corsair has made it simple enough that even beginners and those new to this level of gaming keyboard can get around it fairly well. You may assign not only key presses and input delay as well, but extend these macros to include mouse activity. Thus, a combination of both mouse and keyboard actions can be saved and assigned to a single macro key. It's in this level of control where all the power of the Vengeance K95 is revealed. For customization, it would be hard to find a keyboard that could claim to do more. The K95 RGB isn't just about the pretty colours and the macro keys. There's plenty of functionality hidden in the control software, and if you ever think of buying this keyboard and wish to extract the best from it you would do yourself well to get familiar with the software, and in due time it will prove indispensable for your gaming.

Outside of these two features, Corsair keeps it similar to what was on the original K95, with dedicated multimedia keys including an instant mute button and a wheel for volume control. As with the previous keyboard, there's no messing around with function keys during game play and all multimedia functionality works as it should even without installing the software for it. It is this attention to detail that perhaps created an expectation for the new Vengeance K95 RGB in the connectivity department. Again Corsair makes use of dual USB cables, supposedly for computers with only USB 2.0 ports that may not have enough power for the keyboard and its LED system. We would have expected at least a USB hub on the K95, but sadly this isn't the case and once again we have to wonder how such a feature was omitted when everything else has been crafted and designed to such a high level. Missing as well, but not critical is an audio pass through option for the keyboard. It's always more convenient to plug your headset to your keyboard

in front of you than reaching towards the back of your computer. Still the omission of this functionality does not detract from the overall quality of the keyboard. With refinement through software and a vastly superior lighting system, the Vengeance K95 RGB is perhaps among one of the best gaming keyboards.   **NAG**
Neo Sibeko

SCORE

08   *The K95 RGB has everything the K70 RGB has and more. It is the definitive gaming keyboard from Corsair.*

➕ Great build quality / Impressive software suite / Almost unlimited colour combinations

➖ No audio pass-through and USB hub / BIOS mode shenanigans

Intel Core i7 5820K

SUPPLIER > Intel   **WEBSITE** > www.intel.com   **ERP** > R5,399

T his is the baby X99 CPU from Intel. At around R1,000 more than the Core i7 4790K you may be wondering why you'd want to buy such a CPU. Well there are plenty of reasons for that and one of them is in future proofing your investment. R1,000 is a lot of money if you're on a tight budget but if you were considering a 4790K chances are you were going to invest in a fairly expensive system. As such you may as well pay the extra R1,000 but have a system that will last you much longer.

So what's the difference between the 5820K and the rest of the X99 line up? Well for starters, this CPU has fewer enabled PCIe lanes. That is the main difference between this CPU and its immediate superior the 5930K. Instead of 40 PCI Express 3.0 lanes, it is limited to 28. However remember that the 5930K is over R2,000 more expensive. In fact it may be twice the price of a 4790K in some instances with the current rand/dollar exchange rate.

28 lanes seems limited, but they allow you to do a lot more than what the 20 lanes do on the 4790K. You may run a native 3-way GPU configuration without any switching chip for instance. That means, all PCI Express traffic is handled directly by the CPU and each graphics card would have eight lanes dedicated to it. This isn't possible with the 4790K as you will need the dreaded PLX switching chip which will rob you of performance. This is not to say the 4790K is a terrible CPU, to the contrary it is the fastest CPU money can buy for the Z97 platform. However, the appeal of the 5820K is undeniable.

Over and above the PCI Express lanes, it has an additional two physical cores and thus, four logical cores over the 4790K. Most games do not utilize more than four cores, but with Windows 10 and DirectX 12, harnessing the power of multicore CPUs is much easier and we will see games maximising the power of CPU threads more so than ever. That may be in the future, but at present you'll benefit from any productivity applications you have, video encoding or just general mega tasking (e.g. your torrents, games, encoding, streaming etc.). For mega-tasking, the more cores the merrier and the increased cache size helps programs that aren't

necessarily threaded but perform plenty of data and instruction reads or writes from system memory. That together with the high speed DDR4 support make this a future proof CPU.

As memory speeds increase and prices come down, the 5820K will only benefit, in a way getting faster or at least with the potential to do so, while the speed for DDR3 based platforms have essentially reached their limit. With the recent trend of single sided DDR3 chips as well, performance has actually gone backwards as opposed to two years ago for instance when virtually all 4GB DIMMS were dual sided.

Much like the other CPUs in the family, the 5820K supports four memory channels and thus the amount of memory that can be installed is technically only limited by the motherboard. For most users it will be 16GB of memory at present, but since DDR4 is the future, the 5820K can support up to 64GB of memory, while on the Z97 platform you are technically limited to 32GB (some motherboard vendors can overcome this limitation however). The 5820K may have a lower operating clock speed of only 3.3GHz, but remember that this is a K-SKU so changing that to 3.5GHz or even 4GHZ is a simple matter of selecting 40x in

the UEFI. The thermal output of the 5820K is higher than that of the 4790K and the TDP says as much (140W vs 87W), but with the calibre of coolers we have at our disposal these days, the vast majority of coolers are more than able to handle the dissipated heat of the 5820K.

Performance wise, this CPU more than holds its own against any other CPU that's on offer. It will not match the incredibly expensive but oh-so fast 5960X, but even at 3.6GHz it matched the 4GHz 4790K in game performance and everything else. For the most part it is faster, especially in the threaded applications. For gaming, as soon as you're at 3.3GHz you're pretty much GPU bound at FHD settings in most games. A higher clock speed will not yield any gain whatsoever, but if you're an adventurous individual that chooses to dabble in overclocking, be it at an amateur level or professionally, the 5820K will get you further in your results than the 4790K ever could. Once again, synthetic tests such as competitive benchmarks benefit greatly from the additional cores and massive 15MB of Level 3 cache (nearly double that of the 4790K). Regarding how much bang you get for your buck in high-end computing there really

NAG VALUE AWARD

BENCHMARKS

3DMark 11 physics	>	11,528
wPrime 1,024	>	132.901 seconds
Cinebench 11.5	>	11.61
AIDA 64 CPU Queen	>	63,451
AIDA 64 FPU VP8	>	6,967

isn't a better solution than the 5820K. PCI Express lanes aside, this CPU has the processing power to chew through any type of workload quickly and efficiently. The price difference between the 4790K and the 5820K is around R1,000 but the performance differences between them are worth more than that.

So what of the surrounding platform features? Broadwell CPUs for desktop have only recently been announced and Skylake CPUs with the relevant series 100 chipset are not available. Both platform and performance wise the 5820K is a better investment. The motherboards are in general a little on the pricier side, but consider that a gaming motherboard based on the Z97 chipset such as the ASROCK Z97 Fatal1ty Professional at R3,000 is

only R350 less than the ASRock X99 Extreme 3 SLI. Sure the Fatal1ty board has the Sound Core 3D processor and the Killer Networking E2200 NIC, but the X99 board has native 3-way multi-GPU support and Purity Audio (ALC1150) 2 for all your gaming needs, in addition to 10 SATA 6Gbps ports. In the time we spent testing the 5820K it pretty much delivered at every turn even surpassing the previous generation's most high-end Core i7 4960X. With that kind of performance on tap for a little over what a 4790K retails for and a slew of the most cutting edge features and ecosystem, it is near impossible to not recommend the 5820K for those who are looking to build an ultra-high-end gaming machine. For all intents and purposes, one could easily replace the Dream Machine 5960X CPU with

this one, saving nearly R8,500 and not experience tangible differences in game performance. As far as value is concerned it is rare that we would state that a CPU costing more than entry level office machines is a steal, but in the case of the 5820K it actually is.

Should you be fortunate enough to have the funds for this CPU and are looking to build a machine that will easily last you well into 2019, we would strongly recommend the 5820K. It's an incredible CPU at an amazing price and deserves its perfect score. **NAG**
Neo Sibeko

SCORE

10 *The Core i7 5820K offers the best value for money proposition for power users out of all their current CPUs.*

➕ 12 threads and DDR4 support Incredible performance / Unlocked CPU / Great price for the performance

➖ Needs new memory and motherboard

Intel 750 1.2TB PCIe

SUPPLIER > Intel **WEBSITE >** www.intel.com/ssd **ERP >** R14,999

I ntel's X-25M was, for most of us, the first consumer SSD we ever came across. That was all the way back in 2008. Since then and with each successive generation, reliability, interfaces, protocols and a host of others mechanisms have improved. With the 750 series, Intel has brought all of this advancement to bear. Specifically with this 1.2TB model. This model represents the largest capacity drive from Intel in consumer, desktop orientated SSDs based on one of their enterprise drives, most likely the DC P3600.

As in that drive the 750 is a PCIe/NVMe unit that utilises the next generation protocol (successor to AHCI) and obviously the very fast PCI Express interface. By numbers the x4 interface offers the same amount of bandwidth as the first generation PCIe x16 interface. If anything, that should be an indication of just how fast this drive is. Technically there isn't much we can share with you regarding the 750 as at the time of writing it was still protected by an NDA, thus there was no technical information made available except for the performance data which we gather, test and check for ourselves. The drive uses Intel's own CH29AE41AB0 NVMe controller as found on the enterprise it is derived from. Cache is taken care of by five MICRON DDR3 1,600MHz low voltage chips for an undisclosed amount of cache. Given the similarities between this drive and the P3X00 it could be anywhere up to 1.2GB. Unlike that aforementioned series, the 750 has an increased write IOPS throughput of anything up to 440,000 IOPS in 4K random reads and 290,000 IOPS in 4K writes. Those are by far the highest numbers we have ever seen stated for a consumer drive. In fact so overwhelming are these numbers that there's nothing that uses the SAS or SATA interface that can claim anywhere near this throughput regardless of controller, firmware or

NAND used. For write IOPS 750 out classes some dedicated RAID 4-way PCIe controllers using SSDs.

Capacities are available in several varieties from 400GB all the way to 1.2TB. Solid state storage is one thing and it will have obvious benefits over mechanical or magnetic drives, but the 750 leap frogs the fastest drive we've tested to date (the Samsung PX941) and its successor the 951 so dramatically it's as if there's an entirely new technology and interface that was previously unavailable. It is hard to contextualise this kind of performance into something that you our readers can relate to. Once you start using an SSD and are accustomed to the almost instantaneous nature of navigating your windows desktop for instance, you would think nothing could be faster. Well imagine there was not a single title that you played that took over 12 seconds to load. Not from desktop into the title screen, but from desktop into the level or save point.

It seems unreal yet this is precisely the kind of performance that the 750 delivers. Where storage was

NAG HARDWARE AWARD

NAG DREAM MACHINE

previously measured in megabytes per second, it is now in gigabytes. The recently announced Kingston Hyper-X Predator PCIe drive delivers blistering sequential read speeds of up to 1.4GB/s, impressive in anyone's books. Compared to the Intel 750 though it is still not anywhere near the peak sequential claims of 2.4GB/s by Intel. Our own measurement pegged it at 2.26GB/s. Staggering to say the least. Writes were equally impressive delivering close to the claimed peak performance of 1.2GB at 1,057MB/s. This isn't DRAM cached performance but sustainable throughput numbers throughout the drive. With so much performance however you may be thinking of data integrity, in which case Intel has that covered as well with not one but two capacitors to guard your data against sudden power loss. Capacitors have only been recently introduced to consumer SSDs and it's no surprise that Intel has included such mechanisms on their premium consumer and enthusiast grade solution.

In a practical sense outside the

BENCHMARKS

Average read	>	2,234MB/s
Average write	>	1,056MB/s
Read IOPS	>	275,681.44
4K read (QD32)	>	944.5
4K write (QD32)	>	871.6

context of gaming, those who work with very large volumes of raw footage will appreciate this level of speed. When re-encoding a short 15min 4K video into something a little more mobile friendly at 1920x1080, the system remained responsive even with so many IO tasks taking place concurrently. Compressing and uncompressing files, streaming video at the same time taxed the CPU and it coped well courtesy of 16 threads, but the drive kept up tremendously. This drive not only hosted the operating system, and the video that was being re-encoded, it was also the destination of the new file, the entre system's scratch file (32GB) and it was the source from where all the media was streamed from. On any other system, even with RAID configurations, the computer would slow to a crawl as the overwhelming amount of transactions taxed all the available bandwidth. With the 750 there was none of this. In all the time we have had solid state media, no drive has arrived and lifted the performance bar by such a large margin.

If you're wondering about price, well that happens to be where the 750 will be prohibitive for most people. Given its roots, for the 400GB model you're looking at prices well above R5,000 and for this 1.2TB version, well it would be easier to say it costs about the same as the NVIDIA GeForce TITAN-X. In fact if we add this drive to the NAG Dream Machine, it will be the most expensive component of them all, even eclipsing the magnificent Core i7 5960X CPU. There was no final word on the retail price at the time of writing but be prepared to pay a handsome fee for it.

Purely for technological achievement and performance, this instantly replaces the current NAG Dream Machine OS drive. However it is far from being affordable at present and represents instead what is possible on desktop machines and what NVMe along with future solid state storage may bring forth with them. As we don't have a price even though we are aware that it will be a pretty penny, on sheer technological merit alone the Intel 750 scores a perfect 10. There's absolutely nothing remotely close to this drive on the market and there won't be for a while. **NAG**

Neo Sibeko

SCORE

10 *The Intel 750 is by far the fastest and most advanced consumer desktop drive money can buy.*

➕ Unprecedented performance / NVMe / Power loss protection

➖ Price is astronomical

SPECS

TOTAL POWER OUTPUT / 30W (15x2RMS) RMS sound bar / 30W RMS subwoofer
IMPEDANCE / 8 ohms
FREQUENCY RESPONSE / 20Hz – 180Hz (subwoofer) / 180Hz – 20KHz (sound bar)
CONNECTIVITY / 3.5mm audio jack / optical / Bluetooth

NAG
HARDWARE
AWARD

Razer Leviathan 5.1 channel surround sound bar

SUPPLIER > Razer
WEBSITE > www.corex.co.za
ERP > R2,899

Razer's Leviathan is a brilliant concept. It sells itself as a 5.1 surround sound solution, but you won't find five satellite speakers in its box to accompany its beefy subwoofer. Instead, its speakers are all contained within a convenient sound bar, comprised of two 2.5-inch full-range drivers and a pair of 0.74-inch tweeters.

Yes, that does mean it's not true 5.1 surround sound. The Leviathan is driven by Dolby Virtual Speaker – which is the science that powers those two full drivers and enables them to output audio that can theoretically rival traditional 5.1 sets. I won't blame you if this immediately discourages you from considering the Leviathan as a worthy option for your desktop / living room audio – but rest assured that its performance is mighty impressive, despite its speakers being packed into such a compact space.

In fact, its space-saving design is a large part of the Leviathan's appeal. Setting it up is attractively simple, as it doesn't require perfect positioning of multiple speakers or breaking out your drill bits to achieve the optimal sonic experience. Just place the bar in front of your TV or monitor, hook it up to the 5.25-inch subwoofer, and you're good to go. Bluetooth and NFC support enable painless pairing with mobile devices as well, which is a handy addition.

Audio production is excellent across all ranges, with crisp highs and mids pleasantly complemented by the deep bass delivered by the downward-firing subwoofer. Three equalizer presets alter the audio to suit music, movies and games. Overall the Leviathan oozes quality, but it does present a key concern: at R2,899, it's dangerously close to the price range reserved for high-end 5.1 sets like the Logitech Z906 – which might make it difficult for the Leviathan to carve a niche for itself. **NAG**

Dane Remendes

SCORE

08
It's pricey for a speaker set that's not true 5.1, but it saves loads of space and produces excellent audio.

➕ Great audio performance / Saves loads of space and reduces hassle

➖ Not true surround sound, yet still carries a hefty price

SPECS

STORAGE SPACE / 500GB / 1TB / 2TB
READ SPEED / approximately 100MB/s
WRITE SPEED / approximately 85MB/s
INTERFACE / USB 2.0/3.0, self-powered

NAG
HARDWARE
AWARD

Silicon Power Armor A80

SUPPLIER > TPN Technology
E-MAIL > info@tpntechnology.co.za
ERP > R999 (500GB) / R1,699 (1TB) / R2,499 (2TB)

There's not much that distinguishes most portable hard drives from one another besides read/write performance – but when an external drive can be carelessly thrown around the NAG office (crashing into floors, walls, desks and dubiously muscular RedTide shoulders along its deadly journey) and still maintain data integrity, that's a sure-fire way to grab our attention.

Silicon Power's Armor A80 is tough. It's been drop-tested under a variety of strenuous conditions to a height of three metres. It'll withstand 300 kilograms of pressure. It's compliant with waterproof tests that proves it'll survive under a metre of water for at least 30 minutes. It's also dust and vibration proof. We stood on it, piled things on top of it, used it as a non-returning Frisbee, and still it endured. If you're accident prone and need a portable drive that can withstand your abuse, this is it.

It's also highly performant. Tests reveal read and write speeds of around 100Mbps and 85Mbps respectively via USB 3.0, meaning it's one of the fastest drives out there. It comes with the usual range of backup and encryption software, should you need it. There's a nifty space on its side to store a very short, but functional USB cable. It's more expensive per GB than your average drive, but if you require a drive that'll survive a wrestling match with a bear (sadly, we didn't test this), the Armor A80 is one of the best. **NAG**

Dane Remendes

SCORE

09
It's fast, it'll tolerate a beating and it looks great, making the Armor A80 an all-round excellent portable drive.

➕ Supremely robust design / Fast performance

➖ Nothing

SPECS

KEYS / Cherry MX mechanical switches, individually backlit
ANTI-GHOSTING / Full *n*-key rollover
INPUTS / 2x USB 2.0
ON-BOARD MEMORY / 128KB

NAG HARDWARE AWARD

Func KB-460

SUPPLIER › Rebel Tech
WEBSITE › www.rebeltech.co.za
ERP › R1,525

Func's been around since 1999, but I'd never heard of the brand before getting my hands on the KB-460. It gives a good first impression upon opening the snazzy white box it ships in, with a smooth rubbery texture applied to the whole board and a detachable wrist-rest included to ensure minimal discomfort during extended use. The wrist rest is actually an important addition, because without it the KB-460 stands quite high, which could potentially lead to uncomfortable gaming sessions. It's a solid, weighty board that feels like it can take some punishment, so it'll be a great companion for LANs.

The typing experience is every bit as satisfyingly clicky and responsive as you'd expect from Cherry MX Red mechanical switches, and it's available with Cherry Blue and Brown switches as well, depending on your preference. Red LEDs on each key provide the backlighting, and there's full *n*-key rollover, which means that all keys are scanned independently and ensures you'll never have to worry about ghosting or unregistered key presses.

Two pass-through USB 2.0 ports are provided so you can easily connect your mouse, gamepad or other USB devices directly to the board. All of its keys qualify as macro keys, and each one can be individually programmed using the KB-460's bundled software, with numerous memory banks allowing the creation of a number of different profiles. There's a handy Func Mode which can be toggled to switch between regular keyboard use and your various gaming profiles. Built-in media keys round out the package. It's an outstanding mechanical keyboard, although the price does seem a bit steep, given that you can get similar keyboards from more popular peripheral brands for around the same price. That said, the KB-460 is so impressive that Func may just become your new favourite brand. **NAG**

Dane Remendes

SCORE

09

Sporting a classy, minimalist aesthetic and high-quality components, the KB-460 is a superb contender despite its high price.

➕ Comfortable for gaming and typing / Quality design and construction

➖ Expensive relative to better-known brands

SPECS

BUTTONS / Ten digital, two analogue sticks, two analogue triggers, two shoulder buttons
CABLE LENGTH / 1.9 metres
VIBRATION SUPPORT / yes
SUPPORTS / XInput and DirectInput

Speedlink XEOX USB gamepad

SUPPLIER › Syntech
WEBSITE › www.syntech.co.za
ERP › R399

Very obviously drawing inspiration from the design of Microsoft's timeless Xbox 360 controller, the Speedlink XEOX is a PC gamepad which boasts a smooth rubberised surface that provides a good amount of grip. The familiar X, Y, A and B face buttons adorn its right side, although they're not colour coded and therefore not quite as recognisable as the Xbox 360 controller's buttons. They're joined by a pair of analogue sticks, start and back buttons, and you'll find triggers and bumpers on the pad's shoulders.

The D-pad is a pinch better than the infamous D-pad on the 360 controller, but not by much. The triggers, however, don't provide the same level of responsive feedback as Microsoft's controller, but that's not a deal-breaker. There's a "rapid" button which provides rapid-fire and auto-fire functions when used in conjunction with other buttons. It's a nice addition, but not essential.

Like the gamepad from which it draws inspiration, the XEOX is pleasantly comfortable during use. It's lightweight, but seems solid enough to endure more than a few knocks. Where it's got the 360 controller beat is in its support for both XInput (which is the standard gamepad interface for modern games and the only one supported by the 360 controller for Windows) and DirectInput, which is what's used by older titles. DirectInput support ensures that older games can recognise the triggers as independently programmable buttons, whereas if the XEOX only supported XInput, said games would register both triggers as one button.

Overall it's a worthy choice if you're on the hunt for a gamepad. The 360 controller for Windows costs only a few hundred rand more for a controller that's arguably of higher quality, but if you absolutely have to have DirectInput support, the XEOX won't disappoint. **NAG**

Dane Remendes

SCORE

08

If you're looking for a no-frills gamepad at a great price, the XEOX is a good choice.

➕ Comfortable design / DirectInput support / Great price

➖ Lack of colour-coded face buttons / Triggers aren't the best

HDMI 2.0

VS

DISPLAYPORT 1.3

As with most things computer related these days, a time has come where we are in need of better connectivity setups and higher bandwidth between our displays and graphics cards. There's no use in having plenty of processing power between any two points but with a weak interconnectivity system.

HDMI gained popularity with the shift to home theatre systems and LCD TVs. Where our homes were previously littered with all kinds of cables from Component to S-Video and DVI the move to HDMI negated the need for all these various connectivity options. We only needed one cable and it would take care of it all. HDMI was and remains a success story. It has found its way to home consoles, TVs, graphics cards, mobile phones, tablets and notebooks. In short it is the default connection mechanism for nearly all devices that are able to output to a display. It may be hard to believe but HDMI was initially developed in 2002, even though it was only in 2006 that it saw a popularity explosion. Since it was developed and saw market introduction when DVI was the preferred method of connectivity for computer screens it is not surprising that it has a compatible signalling scheme with DVI.

DisplayPort came to the fore much later even though it was formally introduced in 2006 when HDMI had gained the lion's share of the market, acting as a replacement for DVI in some ways. Unlike with HDMI, DisplayPort is a VESA standard which carries no licensing fees, but does carry a royalty rate. This is an important distinction between the two because HDMI has the support of several companies that form the governing body, as such it has an annual fee and royalty rate compared to DisplayPort which only has the royalty rate. In theory HDMI devices should carry a price premium, but due to the vast number of devices that support HDMI and how the licensing is structured the cost is insignificant and these two standards and interfaces are implemented by most high-end displays simultaneously.

With the advent of frame syncing technologies and 4K video a time has come for both these schemes to get upgrades and on the side of HDMI, the version 2.0 specification is here already in the latest generation of NVIDIA's Maxwell graphics cards. With DisplayPort 1.3, we have yet to see any GPUs or displays but they should start appearing by the end of the year. What is important is that if you're purchasing a display, especially a high-end one, try to make sure that it features either one of these connectivity options and ideally both. At the very least make sure that if you don't have HDMI 2.0 you have Display Port 1.2a. What follows is a quick rundown of what each of the latest revisions to these display standards entail and how they compare.

HDMI 2.0

HDMI 2.0 was introduced at the end of 2013, but it has taken some time for it to reach GPUs and other consumer products. At present only Maxwell GPUs are fitted with the correct TMDS for this updated standard. What HDMI 2.0 allows over its predecessors is full 60Hz UHD support. As a result, some manufacturers have taken to naming their HDMI 2.0 capable products as HDMI UHD. Just like with DisplayPort, this latest iteration has upgraded the maximum TMDS per channel to offer more bandwidth. It has nearly doubled from 3.4Gb/s to 6Gb/s thus allowing for a combined bandwidth across all channels of 18Gb/s. HDMI 2.0 is finally capable of carrying a UHD/4K signal at 60Hz. Also added to 2.0 is the support for the Rec.2020 colour space, Dual View, 4:2:0 Chroma subsampling and of course 25fps stereoscopic 3D support. Audio has been upgraded to a maximum of 32 channels at an incredible 1,536 KHz in total which in practical terms means 7.1 channels at 192 KHz each. HDMI 2.0 adds the very wide 21:9 aspect ratio, a number of audio standards, dynamic auto lip-sync and some other CEC functions. It is more than an upgrade in bandwidth but increases functionality and compatibility over and above what HDMI 1.4a had. At present there is no support for 5K or 8K output but it is conceivable that it may be added at a future date with only minor upgrades needed via firmware on both the source and receiving side. For gaming this new standard means that high scan rate monitors that are 120Hz or 144Hz can be used at resolutions beyond 2560x1440 (QHD). Since HDMI 2.0 uses a packed based protocol, there are many more options made available to the standard which may only be revealed or added in the future. It is quite possible to use a different colour spacing and compression to allow UHD/4K at scan rates as high as 120Hz. Where cabling is concerned, any high quality HDMI cable today can be used with an HDMI 2.0 enabled device and it retains full backwards compatibility as well.

DISPLAYPORT 1.3

Where bandwidth is concerned there isn't a standard that surpasses DisplayPort at present. The latest iteration allows for up to 32.4Gb/s using four lanes that each carry 8.1Gb/s. However that is raw bandwidth. So, with the overhead it is reduced to 25.92Gb/s in total. In comparison it is 7Gb/s higher than what HDMI 2.0 allows. With the added headroom it means DisplayPort can output a 120Hz UHD/4K signal (4:4:4 colour space with no compression). It is only through using DisplayPort that such configurations would be possible. Outside the context of gaming, the same bandwidth allows for the first time 8K (33.1 megapixels) displays at 30Hz or at a full gaming capable 60Hz when using a 4:2:0 subsampling mode (lower quality, high compression). That may not work for gaming, but for video it would be sufficient. 5K (5120x2880) is also supported in RGB mode all the way up to 72Hz. Most importantly however, UHD is not only supported in single display mode, but two UHD screens can be used simultaneously in CVT mode at a full 60Hz each.

Stereoscopic displays are supported as well (60Hz each field at 4K). Compatibility is extended to HDMI 2.0 and it has full support for HDCP 2.2 amongst many other features. Without question DisplayPort 1.3 is technically superior to HDMI 2.0 but at present there just aren't any displays or graphics cards that support it. Until then HDMI 2.0 will continue to gain traction and popularity.

What is keeping DisplayPort active despite the presence of HDMI 2.0 is DP1.2/1/2a as that too supports a 60Hz UHD/4K signal. Even though it has a 780Mbit/s lower maximum bandwidth than HDMI 2.0, it does not compromise its use for a 60Hz UHD or stereoscopic display at 30Hz. Unlike with HDMI 2.0, DisplayPort 1.3 does not update the audio component of the specification as HDMI 2.0 has only with its latest specification managed to equal what DisplayPort could provide since its earliest specification. As such the supported audio streams remain unchanged at a maximum of eight channels of 24-bit audio at 192 KHz which is again 7.1 channel support with an uncompressed (PCM) signal. Connectivity much like with HDMI 2.0 does not change and the same cables that carried a DP1.1 signal can be used for a DP1.3 device. **NAG**

NEW NINTENDO
3DS XL

WEBSITE > www.nintendo.com/3ds/new-nintendo-3ds   **ERP** > R2,999

NAG HARDWARE AWARD

When the first 3DS came out, it was pretty exciting, especially for Nintendo fans. However, the novelty of the 3D technology soon faded away and all you were left with was a kind of fun device that you paid a whole bunch for, just to have a slider that was always turned right the way down, teasing you with its potential. The 3D tech demanded that you stay absolutely still for it to remain stable, somehow also making you feel like you're suffering from motion sickness in your stillness. The controls were fine for most of the standard Nintendo titles, but for more intricate shooters and the like, the limited control dynamics were frustrating to say the least (especially if you have small hands). The question is, can the New Nintendo 3DS XL offer as significant an improvement as is needed to justify a rather pricey upgrade? Short answer: hells yes.

SEEKING STABILITY
The inner camera is used to recognise your face and track its movements, automatically adjusting the angle of the 3D. What this means is that you and the console can move around as you would expect it to, it being a hand-held console, without the entire experience being ruined. The difference this makes to the console is immense. It makes the whole thing a pretty exciting addition to anyone's gaming arsenal. The 3D slider stays all the way up now.

IN CONTROL
The addition of ZL and ZR buttons make certain actions like shooting or using spells more natural in complex game configurations. More excitingly, however, is the addition of the C-Stick; a little nubbin with a lot of potential. Now you can control the in-game camera with a large degree of sensitivity and comfort. The C-Stick is also backwards compatible with 3DS games that support the Circle Pad Pro add-on.

EXTRA CHARGE

Unfortunately, the New 3DS doesn't come with an AC adapter. A Nintendo 3DS adapter will set you back around R139, but it is compatible with older models too; so if you have an adapter from your 3DS, 2DS, or DSi consoles, it'll work on this one.

NEED SPACE

When the 2DS came out, maybe a 4GB standard SD card was a respectable feature, but in 2015, with games growing in size, that's not really going to cut it. Especially when you consider that titles such as Xenoblade Chronicles (downloaded from the Nintendo eShop) aren't going to fit on the system's pre-installed 4GB microSDHC card. So that's pretty annoying.
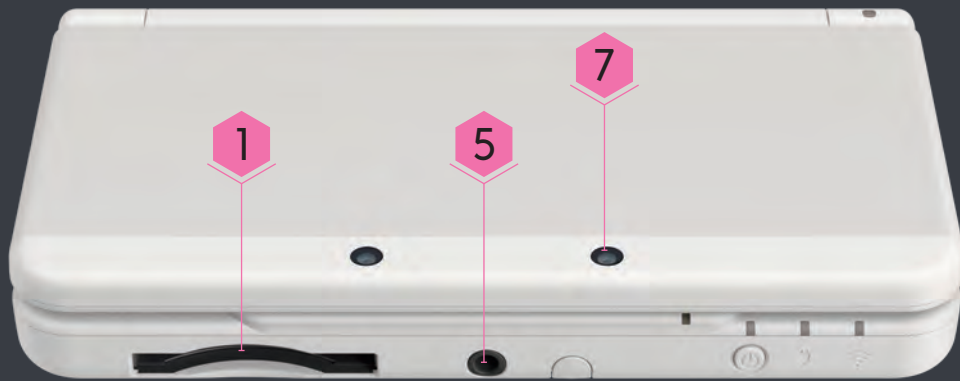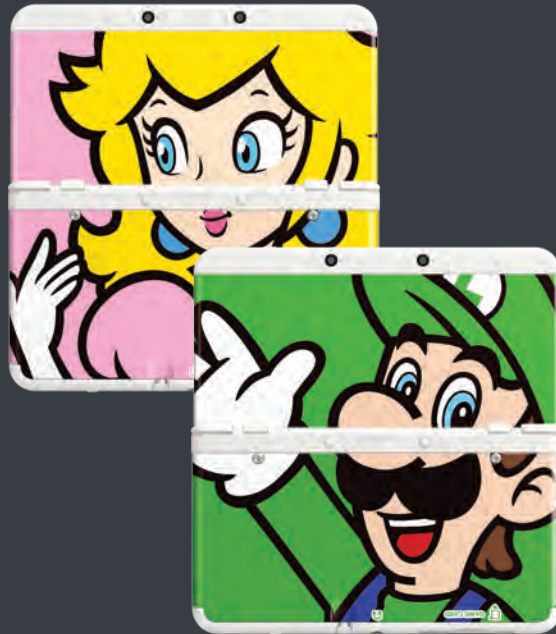
"Now you can control the in-game camera with a large degree of sensitivity and comfort."

SIZE MATTERS

If you're wondering which to choose between the standard and the XL, don't. It's quite simple, really: you want the XL. The difference made by an inch of screenspace is far more worth it than the extra R500 or so you'll pay.

THE LONG RUN

The battery life runs longer than ever now, and you'll be pretty glad about it, because you'll find that you are able (and keen) to play for a lot longer. In fact, you're likely to see your potential playing hours double or more with the friendlier screen and controls. The other great news is that it's backwards compatible with Nintendo DS/DSi and 3DS titles. **NAG**

Game over

GG

BY TARRYN VAN DER BYL

Tarryn is writing about games until interstellar space travel is invented and she can pursue new career opportunities as a bounty hunter.

Don't fear the Reaper

"YOU DIED". My introduction to *Bloodborne* was embarrassingly abrupt, maybe, but not entirely unexpected. I mean, I'd previously played enough[1] of *Dark Souls* to know that I'm bad at games and should just quit and go find something else to do forever instead. Because I'm also bad at doing things I'm supposed to, though, I didn't – and that's why I was killed trying to punch a wolf to death in the opening moments of From Software's latest hard-as-rocks RPG.

But dying is kind of the whole point of the game. At Gamescom last year, I attended a *Bloodborne* developer session hosted by game producer Masaaki Yamagiwa. He explained that, in *Bloodborne*, a player's health bar doesn't represent some abstract, esoteric amount of potential funeral expenses you can incur until an if/else code loop dead-ends[2], but rather, it's the sum total of your will to keep going. Now that's a unique perspective on things – if you die, it's because you want to die, and it's your own fault for picking a fight with a massive clump-spider made of snakes[3]. Learn your lesson, and next time, don't muck it up.

Death as a sort of masochistic motivational routine in games is not exactly something new, but it's also not exactly profound or otherwise meaningful in most of them. You die, you swear, then you reload your last save, and both you and the game pretend it never happened. Not so in *Bloodborne*, which grabs all your cash and XP and effectively holds it ransom against your next death. How much do you want it? We find out, tonight at 10,

[1] About five minutes.

[2] Or whatever it is that a health bar usually represents. I've never really thought about it.

[3] It's a thing in *Bloodborne*, but it's okay because I wasn't planning on sleeping again ever anyway.

[4] It's the same voices that tell me to keep the stray cats I find in the garden though, so perhaps I shouldn't be listening to them.
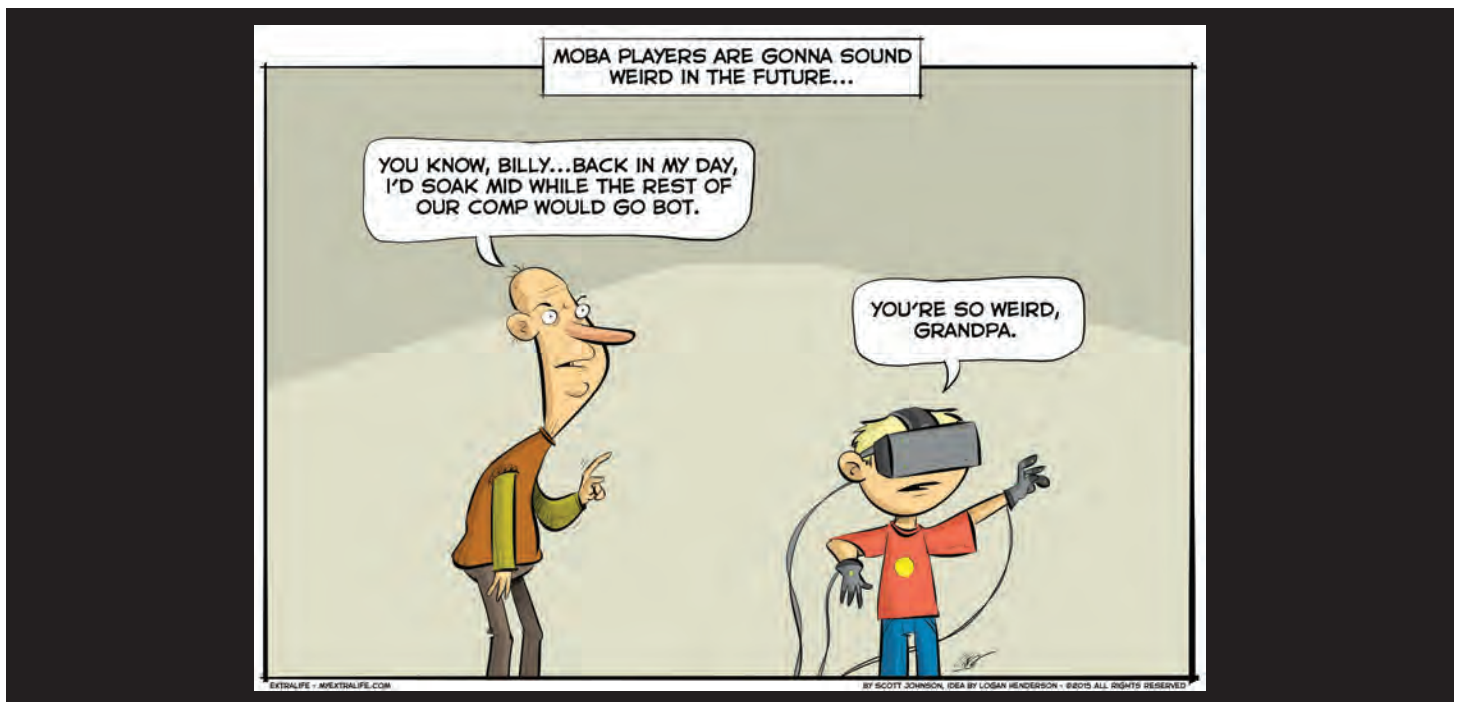
on Who Wants To Be An Infographic Statistic?

And that's how I lost over 57,000 Blood Echoes in the Forbidden Woods that one time, kids.

The ready inevitability of death, however, has an intriguing consequence in *Bloodborne* – the breathless suspense of not dying becomes almost more terrifying than dying. "You're doing something wrong," the voices whisper[4]. "You should totally be dead by now." And that's when I trip off the edge of a buttress into a chasm and everything is as it should be. Wait, no. Not until I leave a note where I died for the next player, exhorting them to take "just one more step". I'm nice like that. **NAG**

EXTRA LIFE