

# IGIC Keynote Reports

One of my colleagues, John Breslin, attended this year's IEEE International Games Innovation Conference (IGIC). John is very active in social media and is the founder of a blog-based news site called "Technology Voice," where enthusiasts of emerging technology can share stories about events, conferences, and other newsworthy items. Anything goes as long as the focus is on technology—no religion or politics here please!

This is a unique experiment in journalism, as it relies on contributors to decide what is interesting and relevant and to write about it. In keeping with the entrepreneurial spirit required to drive any new venture, John is an active contributor himself, and as part of his attendance at IGIC, he captures the essence of several of the main conference keynotes. He has very kindly agreed to share some of these articles with our readers, and I'm including an account of the main conference keynote from Seamus Blackley and a second article on Ian Schreiber's keynote, "So You Want to Break into the Games Industry?"

Thanks again John, and if any of our readers have a desire to break into Web journalism or indeed to share their own technology blogs with a wider audience, I recommend checking out John's site at <http://technologyvoice.com>—consider contributing to this bold new experiment in social media.

— Peter Corcoran



John Breslin. (Photo by Aengus McMahon)

## FROM ARCADES TO APPS: THE HISTORY OF COMPUTER GAMES IS REPEATING ITSELF

(By John Breslin. Reproduced with permission from <http://technologyvoice.com/2012/09/07/from-arcades-to-apps-the-history-of-computer-games-is-repeating-itself>.)

Seamus Blackley, cocreator of the Xbox, has a theory. The new arcade is the tablet, the mobile, the app-powered touchscreen device of today. What we are seeing today in games apps has all happened before: we just need to look back to the arcade games boom of the early 1980s, particularly their adoption by a widespread demographic. But we also have to learn from the arcade games crash and make sure that the same doesn't happen to the games apps ecosystem.

Blackley was the keynote speaker at the IGIC, conducted by IEEE's Consumer Electronics Society, where he spoke about the birth of arcades and what it means for those now in the games industry. His new company, Innovative Leisure, has recruited a venerable team of arcade game veterans to build arcade-like games for touchscreen devices. He is also known as a transforming force in the games



Seamus Blackley

industry, revolutionizing how many play games today when his team at Microsoft articulated a vision for a games system powered by a personal computer—the Xbox.

A self-confessed games nut who got into the games business because he loved video games more than anything else, Blackley felt so compelled to make video games that he was inexorably drawn in. As he says himself, at one point, he woke up wondering what he was doing in the industry, what it meant, how he could make a success for himself there, and how he would explain this new industry to his parents or to friends at parties (although this became easier as games became more mainstream).

Yes, in the 1980s, you got a blank stare for being a games designer, and many were unaware of the computer technology powering these entertainment devices. There was a curious and refreshing cultural disembodiment as people responded to games like an entertainment medium and not a technology. Noncomputer people could play games as they became a widespread cultural trend: they were not a geeky activity as computer culture was only just starting.

Before the birth of the computerized arcade games era, the earliest electro-mechanical arcade games like pinball were a wonder to behold. In fact, they provided the context for computerized arcades because without them the audience wouldn't have appreciated the leap in gaming when the first video arcades were released.

*Computer Space* was the first commercial video game to be sold in 1971, based on the *Spacewar!* programmed data processor (mainframe) game from the 1960s and displayed on a TV vacuum tube. Similar to *Asteroids*, it featured an animated starfield with flying saucers shooting at the player's rocket ship. What was novel was that the player's bullets could track a ship and could also be controlled by the arcade buttons. But many still wondered what this thing was and why no TV shows were being displayed on this tube-like screen in a big box.

*Computer Space* was eventually a failure because it was too much and too complex: people just could not figure out what was going on with it. *Pong* came soon afterwards, inspired by the earlier game *Tennis for Two*, and achieved more widespread success through its simplicity.

There was a great sense of entrepreneurial spirit in bringing these arcade games to the masses, but there was a terrible problem that the producers did not anticipate: copying. They had not trademarked their games (why should they?), and *Pong* became so successful that it was copied multiple times. So what to do next? The arcade game producers hired teams to come up with ideas and play around with them, going beyond the different manifestations of *Pong* to produce driving games, flying games, etc. Games started appearing all over the place, and the instantaneous growth in the scope and range of arcade games in late 1970s and early 1980s was completely extraordinary (sound familiar?).

At its heart, the arcade game industry was essentially a refrigerator-manufacturing business, but the market was huge. *Asteroids* alone was a US\$4 billion business, producing over 80,000 cabinets in the



An original *Computer Space* console.

1980s. The *Battlezone Asteroids*-type arcade game was a technical design disaster by today's standards: high voltages inside the case, fluorescent lighting, plastic shrouds, and featuring a 400-lb cabinet in case people

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would try to steal it (and people did, stealing pickups that were used for transporting the games and leaving the pickups behind). The arcades were extremely profitable: these cabinets would make US\$400 a week for an *Asteroids*-type machine.

The growth of this industry is illustrated by the fact that in 1978 the U.S. domestic games business was US\$50

million. Three years later, there were US\$900 million in sales of cabinets and US\$5 billion in quarters was spent at these arcades. In 1982, this figure rose to US\$8 billion in quarters (US\$19 billion in 2012 money). At that time, Atari was the fastest growing company in the history of the human race (Blackley referred to articles in *Business Week* from that time and how you could almost replace the name Atari with Facebook to produce modern articles word-for-word). To give context, the music industry was worth US\$4 billion in 1982 and the movie industry was worth US\$3 billion. *Pac-Man* itself eventually became an industry on the scale of the entire movie business at the time.

Nowadays, people often compare these primitive games with fully featured gaming environments like *Modern Warfare*, but they forget that today's games are being launched into a very mature and games-aware audience. Also, the games of the 1980s were not just being played by a niche of gamers but rather by a universal demographic of people. For those amazed by the wide-ranging demographics of those now playing games on mobiles and tablets, this really is not new news. There are other smaller similarities: the achievement badges with high-quality designs and artwork from arcade games like *Asteroids* or *Gravitar* are very similar to those given out on XBLA, PSN, or iOS games today. The games trade shows are just as silly as they were back in the 1980s when they were invented. And there is even some cosplay!

What we are facing now is not a brand new situation that no one has ever seen before: there has been no sudden horrible change in the demographics of the world that is causing consumers to behave in some insane way as they take up gaming. We again have a culture that gives permission to play games—just like it was in 1977. You can be enthusiastic, you have permission to be a gamer, and companies are again talking to a whole audience of people they have not been able to talk to in nearly 20 years. It is interesting to see the corner

being turned again, but there is a pattern in human endeavor that has dogged us since we started keeping records.

A new idea is introduced and sees initial success. People get accustomed to it, but then we lose the context for that idea, it declines, and it takes a long time to build back to where you were (there are numerous examples of this from TV or movies to computers). Games also had that effect in the 1980s: players with high scores became virtual heroes appearing on talk shows, and there were TV shows consistently at the top of the ratings with kids just playing video games and audiences cheering them on. People got sick of it, and games went away to become more of a hobby interest, with the marketing of games being targeted toward this hobby audience.

Now, with games reemerging from their hobby audience demographic back into the mainstream, the danger returns. The need for novelty in games begets the demand for a range of games catering to different tastes, which in turns leads to exploitation and overproduction, with the inevitable crash. Unfortunately, the video games business did an excellent job of crashing itself in 1980s. As an example, there were more cartridges produced for the game *ET: The Extra Terrestrial* than there were Atari 2600s on which to play them (many are reportedly buried under concrete somewhere in New Mexico). Everyone knew it was crazy, but games were so extremely popular that the industry had to do something like that. Blackley refers to an Atari internal memo from an Innovative Leisure colleague, Rich Adam, in which he bemoans the impact of what he terms “license fever” on the quality of video games. If you start to feel that you need to exploit a business because of its scale, you are beginning to disrespect the customer and will crash yourself.

The way that people purchase and play games has changed radically recently. Much has been made in a variety of media articles about the death of consoles, about social media taking over the world, or the death of social media, and so on. Facebook has

changed the way that we think about talking to customers online; iOS has changed the way we think about marketplaces and digital downloads; and Amazon has changed the way we think about hosting our content and data. The world is changing, but we can still try to engender that special feeling of getting a game for the first time. This is when a teenager drives all the way to a store to get a new game and spends US\$16 on a plastic disc because they love the medium so much. Blackley advised us not to squander that, to remember how much we love games, and to recall that moment when you first saw a game



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that was really special, that changed your life. He wants game producers to focus their efforts on recreating that and passing that moment on to the audience. A love of gameplay, a spirit of innovation: these are the things that makes the video games industry a really good business.

Just as I was writing this article, Seamus Blackley coincidentally wandered by, and we had an interesting chat about the origins of his name. (While working at Looking Glass Studios as Jonathan Blackley, his colleagues gave him a new name—Seamus—that he adopted informally at first and later formally through a name change). He asked me to mention in the article that he was mean, but actually he is an inspiring guy. Thanks, Seamus!

## **SO YOU WANT TO BREAK INTO THE GAMES INDUSTRY? HERE'S HOW...**

*(By John Breslin. Reproduced with permission from <http://technologyvoice.com/2012/09/08/so-you-want-to-break-into-the-games-industry-heres-how>.)*

You have a passion for computer games, and you think you want to work in the computer games industry. How should you go about it? You could listen to the advice of Ian Schreiber for a start. Ian has worked as both a programmer and game designer as well as teaching game design and development at Ohio University, Athens. He recently shared some tips with students and young researchers involved in the games area about how to get that ideal games job.

If you have ever been a student in college, you probably know that there are always a variety of motivations for how colleges work and what they should ideally do. Student success is the primary one, but that success may not entail you getting your dream job in the career area of your choice. However, what you do in the lead up to that job hunt can help you maximize your chances of reaching your goal. There are two main parts to this: 1) knowing your goal and 2) figuring out how to get there.

For knowing your goal, those in a games degree program probably already have a good idea of what the job entails, but for others it may be more tricky. A typical conversation would be: “I love playing games, so the thought of making them sounds really cool.” “Are you going to be a programmer or an artist or a game designer?” “Oh, what’s the difference?” You need to understand that first before you go any further.

For getting there, the games industry is fairly straightforward in terms of what they are looking for. Basically, they just want to make awesome games. “Awesome” differs from company to company, whether it be a well-reviewed game, one that has great gameplay, or one that makes a lot of money. They want to know if you can be part of the team that can help them make that awesome game.



So the challenge is showing them that this is something you can do. You need to provide credible evidence that you can do it. How? The most obvious way is simply by making games. If you are not already making computer games on your own because you love doing it so much (and you are already in a games course at college), then you might want to consider changing degrees. What do you think you are going to be doing full time after graduation?

If it is not an activity that you will love doing, Ian said you should reconsider going into it as a career, as the pay is lower and the working hours are worse than some other similar careers. (Check out Glassdoor to read about validated anonymous people working at various companies, either praising their companies and the benefits, or spilling dirt on their employer and why it sucks to work there. For example, Valve gets good reviews.)

You need to decide if this really is a career you want, as it is better to find out as an undergraduate before going to industry and burning out. Five and a half years is the average length for a career in the games industry before burning out (that is a full career, not a single job), so you may want to go do something else. But if you listen to Ian's advice, do your research first, and still eventually go into the games industry, you will probably enjoy it, and it may well be the best job ever.

Ian is a coauthor of the book *Breaking Into the Game Industry: Advice for a Successful Career from Those Who Have Done It*. He wrote the book with another industry veteran, having himself worked in the games area for 12 years. As part of his research, the authors asked a series of games industry leaders to provide paragraph-long answers to frequently asked questions, and the resulting combination of answers is a useful guide for job seekers in the industry.

Ian cited personal experience in his quest to become a games designer as opposed to just a programmer. Having programming skills is useful because if you do not know what is easy and what is hard to code, your game designs will

be brilliant but impossible to execute. Games companies are also very cautious in hiring designers, since a mistake on the part of the designer can have serious repercussions that can bleed across departments. It is a position of trust, and if the company already has a designer, they tend not to want to give that trust to anyone new.

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prototypes you did on your own or some ideas you had that got into the final version of a game. Build up some evidence to show that you can be a good game designer, too.

There are other ways to demonstrate that you have a range of nontechnical or soft skills that a company is looking for, whether it be relevant nontechnical subjects studied (that history minor may be relevant for historical games) or your ability to work in a team. Show that you have a track record of working on a team with other students, and if the opportunity arises, try to take leadership positions in games being developed in or out of class. It is good to show that initiative: that you are capable of doing things without being asked or required to, for example, by showing that you made games outside college on your own because you wanted to.

There are some in the games industry who claim that they would rather

not have done an undergraduate course, but instead would have spent every moment teaching themselves how to make games and doing nothing else. Ian disagrees: college makes you more rounded and helps with breaking into the industry. The most useful thing about college and spending four years in a safety net from the outside world is that you have this time to experiment on games projects and ideas that you could not get away with anywhere else—and you can do it without costing a publisher US\$3 million dollars on a failed project. You also have a bunch of like-minded people in college with similar interests and career goals, and that is a huge resource you can use.

Ian also talked about the difference between entertainment games and serious games. Jobs creating serious games are a lot less competitive than the entertainment games industry, and with fewer applicants, it can be easier to get your foot in the door. Since fewer people are attracted to developing them, serious games tend to be less polished than entertainment games. The area is really challenging and interesting, and serious games are certainly harder to make than entertainment games. They not only have to be fun or profitable, but there is also that additional purpose that weighs down on you like a giant weight. It can be very rewarding to be able to say “my game helped end a war” or “my game helped save 500 lives.” Ian advised those interested in serious games to attend events like Games for Change or the Serious Games Summit.

He stressed the importance of going to games conferences and networking, as this is very important in the games industry. The saying “it’s what you know” is better put as “it’s what you know and who you know” for the games industry, as you have to know the right people if you want to get that ideal job.

If you have not built any complete games, mods (modifications to existing games) can still work well in a portfolio. This is especially true if you can point to it and say that you thought a

particular game was good, but there was a weakness you found after your analysis of the game design, and this is what you did to capitalize on that and make it better (it needs to be more than a funny-shaped level).

One valuable piece of advice from Ian was to avoid throwing everything you have ever done into your portfolio. Your portfolio should be your strongest stuff—the entire set is only as strong as the weakest link and should show the best of which you are capable. Do not pad it with early work like that badly drawn polygon animation with lens flare. You need to put in work that shows what you can do—whether it be mods, design documents, or full working games. Of course, this depends on the company. Showing a *Half Life* mod when applying to Valve will carry a bit of weight!

If you are a budding programmer, you may also wonder about the demand for those with artificial intelligence (AI) experience at the undergraduate or postgraduate level. If you can show working games with some AI, this can be pretty compelling, but

the downside is that not everyone needs an AI programmer (certainly not *Farm-Ville?*), and the academic notion of AI often differs from real gaming requirements. The perfect academic AI will win in the best and most efficient way



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possible; the gaming AI will put up a good fight and maybe lose, but it will be fun to engage with and demonstrate intelligent play to make the game feel more awesome.

There is also the commonly asked question of how those in the games industry can balance their time playing for fun and making games. Making games is very demanding and time

consuming. You could spend up to 16 h a day to get that next milestone out the door, and you may not get much time to play. But as a professional game designer, you need to play games because you are doing research. As seen on the show *Extra Credits*, there is a difference between playing as a designer versus playing as a player. As a designer, while playing you are analyzing your own play. “Oh, I’m feeling joy with this level. Why is that?” It is a bit like a professional comedian dissecting another’s jokes: something is lost along the way. For a designer, shutting off that analytical part of the brain is very hard, but you can still play games that are different in nature to those you are making and enjoy them.

And that is what it is all about in the end of the day. Someone somewhere has made a computer game for your fun and entertainment. Hopefully, you can do the same for somebody else someday soon.

*Ian was speaking at the International Games Innovation Conference, conducted by the IEEE Consumer Electronics Society.*

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## The History of IGIC

The idea of games and fun is possibly as old as humanity. The Socratic idea of dialogue through questions is a brilliant example of an activity that may qualify as a game. This method is designed to guide the learners to self-discovery by asking them a sequence of appropriate questions. The learning outcome with this method in a classroom provides great

satisfaction, challenge and competition, a sense of achievement, immersion, and rewards. Do these remind you of anything?

Games have always been used to make activities such as learning, training, and even nonactivities such as passing of the time more fun, and learning in such environments is much easier and more difficult to forget because it is associated with a joyful experience. Our interest in IEEE in games had always focused on making science,

engineering, and learning more fun and easier to engage. We have recognized developments and breakthroughs in software and hardware technologies that have been brought about by games. Examples of such technologies are programming on GPUs and their impact on scientific computing using huge parallel-processing power on graphic cards and also designing of controllers based on full body gesture in many applications. There is also availability of highest quality of three-dimensional content