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## In The Middle

By: Christine Arrington

### Middleware for interactive entertainment: Bright spots in the economic gloom.

Middleware targeted at the electronic entertainment industry has evolved in recent times from a set of products focused on helping game developers automate graphics and animation to a full suite of products for automating tasks ranging from graphics to character intelligence. Meanwhile, the companies making middleware for interactive entertainment have broadened their reach to include many more platforms outside of game consoles and PCs, including mobile phones, PDAs, and set-top boxes for interactive television (ITV), and some are now reaching into new markets, such as Blu-ray disc players and automation in the film industry.

According to findings in Acacia Research Group's "Middleware for Interactive Entertainment 2009," spending on game middleware will continue to be slow in the first half of 2010, with publishers and developers remaining reticent about spending. However, spending will pick up when the video game pipeline revives in the second half, when investment in new projects returns. As nervous as they are, developers and publishers will need to have new games in the pipeline. They cannot delay development indefinitely.

Spending in the ITV segment also will remain slow for the first half of the year based on the saturation of the digital set-top box upgrade market in mature markets and lower price points in emerging digital television markets. Mobile middleware spending will increase as the demand for smart phones with much more sophisticated hardware make gaming and other entertainment applications more accessible on mobile devices.

Overall spending on middleware for electronic entertainment will increase at a compound annual growth rate of 9.3 percent, from approximately \$1.3 billion at the end of 2009 to just over \$2 billion at the end of 2014.

### Console/PC

It is no secret that the electronic entertainment industry has suffered along with the broader economy over the past 18 months. The slowdown in the video game business has had a ripple effect, making it much harder for industry suppliers to generate revenue growth. Unfortunately, it will take some time for video-game developers and publishers to increase spending on...

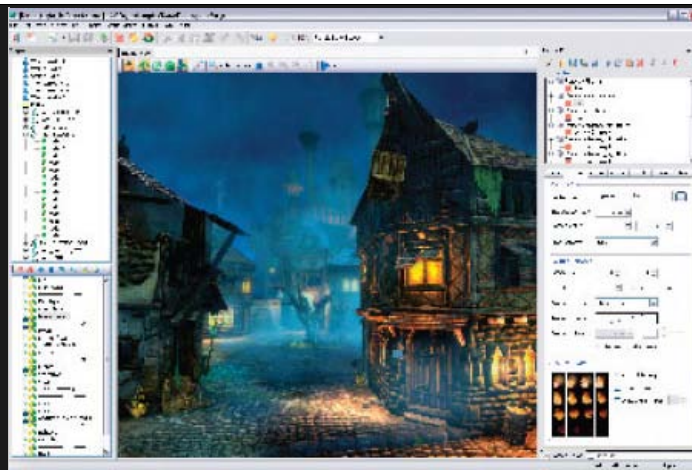
The outlook for spending on game middleware is sketchy for the first half of the year. The lull is primarily driven by cancellations and delays in late 2009 in developing new games for consoles and PCs. For middleware providers that the industry is mid-cycle between console and PC, this, coupled with reluctance to invest heavily in game development, has left the pipeline relatively dry. While both Sony and Microsoft are releasing new controller technology in 2010, which will require new games that take advantage of both the Motion Controller and Natal, respectively, the lead-up is still nothing like a console launch.

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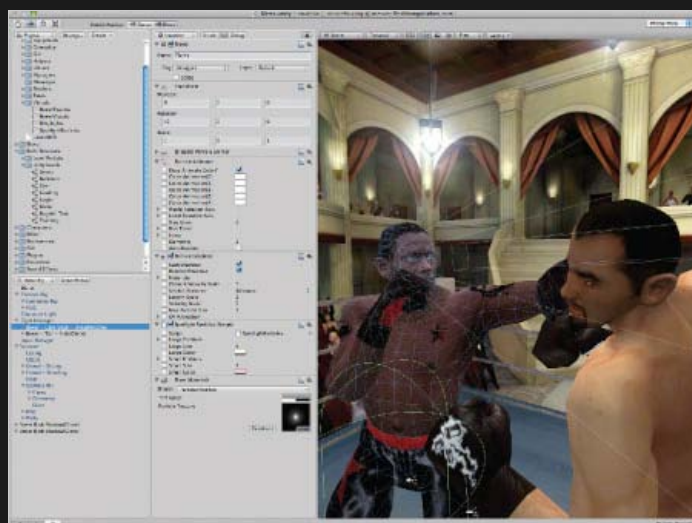


Trinigy's Vision game engine can be used to create entertainment for a range of platforms.

These delays mean that the growth in spending on middleware will remain slow through 2010. If new consoles are delayed longer than their typical seven-year launch cycle, that will push a return to fast growth even further out as game developers wait to invest in new technology until they have access to development programs for new consoles.

Casual gaming is having a huge impact on console and PC gaming. Earlier in the decade when casual gaming was taking off, the theory of most game developers and publishers was that casual gaming would be additive. Core revenue from the hard-core immersive gaming sector would remain the bread and butter of the industry, and casual gaming would add to that revenue. In an economy where consumers walk away from a \$60 console or PC game and eagerly buy up a \$10 casual game, developers and publishers are looking at casual gaming to generate revenue that previously came from hard-core games. Casual game revenue was not supposed to replace hard-core game revenue, but for many publishers it has. This has left middleware out in the cold in many cases. Casual games just do not need all the bells and whistles of a hard-core game, the sector where most middleware providers have been focused for a long time.

However, the news is not all doom and gloom. There are several things on the horizon that will push game middleware back into the kind of growth territory expected of nascent technology industries. At some point, game console makers will launch new platforms. The new platforms may not be developed on the typical launch schedule, but the advances in PC technology will leave game consoles behind, and gamers will begin to demand that faster, better machine. The economy will get better, as well. For the game middleware makers that have invested wisely and are spending the hard times developing new technology, there will be pent-up demand that will result in new seats and subscriptions when gamers start buying titles en masse again. Spending on game middleware for console and PC titles will increase at a compound annual growth rate of 12.4 percent, from \$413 million at the end of 2009 to \$740 million at the end of 2014.



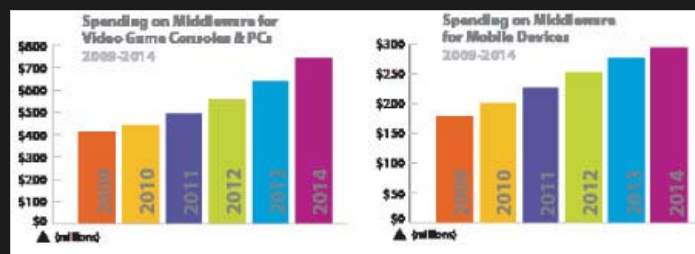
Unity Technologies' game engine is just one of many integrated authoring tools for creating 3D video games and other interactive content, such as architectural visualizations or real-time 3D animations.

## Mobile

The mobile industry was one bright spot in the overall economic picture throughout 2009. In particular, the smart phone segment outpaced most expectations driven by the iPhone. According to Gartner research company, third-quarter sales of smart phones were up 12 percent in a global economy that was still struggling. Middleware makers have been keeping tabs on the mobile game segment for more than a decade, waiting for graphics acceleration, memory, and power management to advance to the point where gaming made sense on a handset.

Now, most mobile handsets are more than capable of handling base 2D games, and a significant portion of handsets are now ready to take on 3D gaming, such as that being enabled by Unity's iPhone middleware.

Mobile entertainment middleware as a business is relatively young. Many companies and technologies have been around for less than a decade. This means that the industry is still in the early stages of developing successful business models. Experimentation with models ranges from hosting and portal services where technology providers take a piece of each transaction, to stand-alone, off-the-shelf game engines at a per-game price. Middleware makers looking at the mobile middleware market from the game or ITV industry have to be prepared for a completely different market. Development budgets in the mobile game industry are a fraction of what they are in the PC or game console industry. Selling a solution that is hundreds of thousands of dollars will not fly in this segment, so middleware providers must be innovative in developing a large community of users and selling product at a very low price point relative to what can be charged in the console and PC game development industry.



Middleware makers in this segment must also compete with a very helpful mobile technology industry. Handset manufacturers and chip makers, such as Nokia and Qualcomm, among others, provide development technology for free. The point is to encourage the development of applications and content for Nokia and Qualcomm technology. Middleware makers have to provide solutions that developers cannot get through Nokia's developer network, Qualcomm's BREW, or Sun's Java suite of products. The key to competing successfully with these mobile technology giants is that these providers are not in the entertainment business and oftentimes the solutions they provide are not necessarily optimized for entertainment. Voice technology is the bread and butter of the mobile industry. These free solutions do not always take into consideration issues that are important to gamers, such as controllers, latency, and plain fun—areas where game technology providers can differentiate themselves.

As game developers and other content providers look for cheaper ways to develop games, mobile content will continue to look attractive. When confronted with spending millions of dollars on the next console game, compared to hundreds of thousands of dollars on the next mobile game, many will opt for mobile. The iPhone represented the tipping point for mobile entertainment, but it is just the tip of the iceberg: with Android finally providing true competition, mobile entertainment will explode. This will push spending on middleware for mobile entertainment to a compound annual growth rate of 10.6 percent, from approximately \$178 million at the end of 2009 to \$294 million at the end of 2014.

## ITV

Digital set-top boxes for interactive television have finally become powerful enough that true interactive applications are now being developed for many pay television services. Entertainment applications, from karaoke to casual gaming, are proliferating in markets such as South Korea and the UK. This segment has been tough for middleware makers. By the early 2000s, it had become clear that middleware was not going to generate enough immediate revenue to be a stand-alone business. Pay television operators were not interested in anteing up additional costs for software in set-top boxes, and it would be a few more years before these operators would see the value in middleware. Now, nearly a decade later, the middleware market for cable and satellite in mature pay television regions is dominated by two companies: NDS and OpenTV. Neither of those companies are pure play middleware providers. Each company has diversified its product line to include back-end or application development to ensure cash flow. The fierce competition in ITV middleware is in emerging cable, IPTV, and satellite

markets, where companies, like Alticast, have seen increasing success and familiar names, such as Microsoft, are finding new customers. IPTV operators are using advanced applications as a competitive edge over traditional cable and satellite networks.

The primary driver behind growth in pay television subscriptions over the past decade has been the move to digital networks. This has allowed set-top box manufacturers and middleware makers to survive harsh economic times that have destroyed many businesses. More mature markets, such as the US, are well into the transition, with emerging markets in India and China now presenting opportunities for new growth, although at much lower price points.

For middleware companies that have traditionally focused on game consoles or PCs as their market, the ITV segment does not bring to mind obvious opportunities, but set-top boxes are now becoming powerful enough to handle more sophisticated graphics, and consumers in markets outside the US are being treated to much more sophisticated interfaces and applications. While traditional game middleware manufacturers are not going to suddenly try their hand at ITV middleware, the market does present opportunities for partnerships and technology licensing.



A big growth area for gaming middleware is the mobile market, as a number of handsets tackle 2D and 3D gaming, including LG Dacom with its karaoke application.

Television is changing dramatically, and game middleware providers have been enabling more immersive interactive entertainment for a long time. As TVs become more interactive, the opportunities will become more obvious, such as interface, font, voice, and even graphics technologies that can make the crossover. These are just a few of the types of technologies long used in game middleware that could find a home in ITV through partnerships and alliances with set-top box, television, and ITV middleware makers.

Spending on middleware for interactive television will grow at a compound annual growth rate of 6.9 percent, from approximately \$701 million at the end of 2009 to \$980 million at the end of 2014.

Overall, the market for entertainment middleware will suffer from economic problems well into 2010, but that will create pent-up demand that will return toward the end of the year and in early 2011. Those companies that have invested wisely and are using this time to develop new, compelling technologies for interactive entertainment developers will be best poised to attract new and returning customers later in 2010 and early 2011.

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