

Q&A with John Romero of Monkeystone Games

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Mobile Games

NOKIA

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1 Introduction



Game developer heavyweight John Romero decided in 2001 to jump with both feet into the mobile arena. Romero, whose PC game achievements include Wolfenstein 3D, the Doom series, Rise of the Triad, and Commander Keen, among others, sees mobile games as a new frontier for traditional PC game developers.

Romero's company, Monkeystone Games, focuses on creating games for both PDAs and mobile phones. His team recently developed the mobile version of the first-person shooter Red Faction for Nokia's N-Gage™ mobile game deck. In porting Red Faction to the Nokia device, Romero's team worked with the X-Forge 3D game engine, which was developed by the Finnish company Fathammer.

The process was a learning experience. According to Romero, he discovered that the Nokia N-Gage game deck is a robust mobile game platform and the X-Forge 3D game engine offers great design features.

Romero was particularly surprised by the power of X-Forge. He discovered that its feature set makes the learning curve worth the effort. For instance, Romero's team was able to create cool special effects like flaming exhaust from a rocket by simply dropping images into the X-Forge tool "thingamajig" and then manipulating them.

In addition to specific lessons learned from porting Red Faction to Nokia's device, Romero has a lot to say about the mobile space in general. According to Romero, mobile game development offers more potential for creating dynamic games with tools and powerful devices, like the Nokia N-Gage device with its Symbian OS, than developers might have originally believed.

2 Interview



Forum Nokia: Beyond the Red Faction port, can you explain how an established game brand can and should be extended into the mobile space?

Romero: I believe that a potentially profitable route for established brands is to not just port them to mobile, but to actually extend the IP in new directions. For example, instead of doing a mobile port of Red Faction, it would have enriched the brand if the story were taken in another direction that added depth to the main character, Parker. That way, someone who had already played the PS2 or PC version would have much more reason to get the mobile version since it wasn't just a port.

A mobile version of an MMOG [massively multiplayer online game] could connect to a special mobile-only server that hosted a mobile-only section of the game world. That would pull a lot of users over to the mobile version in addition to the PC version. Allowing players to log on with their current character and increase their character's stats while playing on mobile [devices] would definitely be a nice feature, in addition to being able to find special items only in the mobile world that their character could use in the PC version.

With this type of approach, we give the mobile game space a very special reason for existing: It could be the only place where you can play a special version of an existing brand. With this development strategy, a company can enrich its brands while also helping to validate the mobile game space. I believe we need to move in this direction, but also continue original, mobile-only game development that takes advantage of mobile capabilities.

Forum Nokia: What opportunities are there for brand movement in the opposite direction, for instance, a popular mobile game developed on the Nokia N-Gage mobile game deck that could port to the PC market?

Romero: Well, it's always possible that a game on a mobile device can be so popular that PC and console versions are created, but it's very rare. Especially if a game takes advantage of wireless-only technologies, the chances for a PC port are very slim.

Forum Nokia: What are the challenges developers face working with branded content?

Romero: The biggest challenge is getting your art assets approved by the licensor. After that, since the concept has already been approved, it's not too difficult. It's very difficult to create a new IP for an existing brand with a very controlling licensor. The perks of working with a popular brand are a high volume of sold-in titles at launch.

Forum Nokia: What genre of games do you see prevailing in the mobile space?

Romero: I strongly believe that casual games are going to dominate in the mobile space. This includes puzzle games like Tetris, Bejeweled, etc.

Forum Nokia: What are the distribution challenges for mobile developers?

Romero: Creating a front end for software purchasing that's as [in]visible and easy to use as BREW is something that every OS designer should focus on or else sales of OTA [over-the-air] software are going to continue to be slow. It will be a challenge to add yet another section for mobile games to already-packed retail stores like EB [Electronic Boutique], especially in today's early stages. It's already incredibly difficult to get Pocket PC titles on the shelf, and that platform has been around for several years now.

Forum Nokia: What games do consumers seem to seek out — C++ or Java™ technology games?

Romero: Well, I personally like C++ games because they run much faster and have more content. Java games have a 64-KB size limit so they're very, very simple.

[Note: This is true for Nokia Series 40 devices, but not an inherent limit on Mobile Information Device Platform (MIDP) applications for other platforms.]

Forum Nokia: What are your thoughts on the differences between BREW and Java technology? Will Java technology eventually win out?

Romero: Well, right now BREW is going gangbusters, but Java technology is on a lot more phones. I really like BREW so much more because it's native C++, so the games are much faster — not to mention there's so much more memory available. But we shall see ... Java technology is more widespread and the Java phones are getting more memory now.

Forum Nokia: How broad is the demographic audience for mobile games? What is the standard age for mobile gamers?

Romero: The demographic starts young — around 15 — and extends to 40. The standard age range for most mobile gamers is between 17 and 25.

Forum Nokia: What are the tools you use as a wireless game developer?

Romero: It all depends on the game. With Red Faction, we used Fathammer's X-Forge technology in conjunction with [Adobe] Photoshop and [Discreet] 3D Studio Max. With our other games, we use our in-house Keystone Technology, which is cross-platform and makes it easy to put our game on several platforms quickly.

For coding, I generally use [Microsoft] Visual Studio 6.0. I've moved over to Visual Studio .NET for our latest games. One of my firm beliefs as a coder is that all data should be centralized in one big asset file. I abhor seeing hundreds of files all in subdirectories when I install a game — I like my games very clean. So one of our main tools is a program that manages grabbing graphics from BMP screens, converting them to whichever native format we need (PC, Pocket PC, Game Boy Advance), and adding them to a data file. It handles all kinds of data that our tech[nology] uses, and allows us to easily add any kind of file into it and compress it as well. It's all automated by a script file.

Forum Nokia: What are the challenges every mobile developer faces?

Romero: Squeezing as much fun into the amount of space on the device you're writing for, in addition to trying to innovate on this new platform.

Forum Nokia: What was your worst mobile game failure?

Romero: Well, I think our worst mobile game failure was a medium-sized role-playing games (RPG) written for the Pocket PC platform. I know that most developers who gravitate to the mobile space most likely come from the mainstream game industry, so there's a very strong tendency to create the same kinds of titles you see on PCs and consoles for mobile devices. But seriously, I think the most popular games for mobile are going to be games in the casual gaming category as opposed to the more core genres. And if it's online and MMP [massively multiplayer], it's going to be hot.

Forum Nokia: What are the next steps for you in your mobile game pursuits?

Romero: Developing on all the available devices, which is what we're doing, gives us a broad range of experience. But pursuing original IP development in addition to developing brand-enhancing titles for mobile-only is definitely our target.

Forum Nokia: What would you say is your secret weapon?

Romero: Years of experience and a small, hard-core development team.

Forum Nokia: What should every mobile game developer know about the mobile industry?

Romero: Try to be as creative as you can in the space you have. There are a lot more developers in this space now, so the competition and quality level is getting higher and higher. It won't be long before mobile games require teams of developers to create one title. I can tell you we had several developers on Red Faction.

3 The Promise of Mobile Games



According to Romero, developers just starting out in mobile development may face a learning curve, especially when working with platforms such as Nokia's Series 60 phones, which use Symbian OS.

"If you don't have your Symbian [OS] build process down pat, it can take several hours just to get your game compiling and able to transfer to the device," Romero says. "The Symbian [OS] build process is pretty complicated. Also, if you create a SIS file for your game and it's over 2 MB, forget about making it a SIS because it's too big for the Nokia N-Gage device to unpack [at the time of this writing]. Use the USB cable to transfer your game files manually to the MMC [MultiMediaCard] instead."

Romero says that mobile devices such as the Nokia N-Gage device have evolved so quickly that they've caught the industry by surprise. "Everyone thought that the 'mobile future' was still a ways off, with everyone playing games on regular ol' cell phones. Nokia's announcement of the Nokia N-Gage device showed everyone that wireless gaming was real, it was serious, and it was here *now*. I love the Nokia N-Gage device for this reason: It quickly ushered in the age of wireless gaming because the 'Nintendo of Cellular' was behind the concept."

Romero knows that there are great opportunities for developers in the mobile space right now. Beyond that, he admits to having a hard time predicting the future. "I don't know," Romero says, "all I can do is my part in furthering 3D games on mobile devices and see where it goes. Incorporating the strengths of wireless is pretty important to developing this segment, I believe."

4 Sample Code



4.1 Initiating Networking with X-Forge

According to Romero, if you are going to use Internet or Bluetooth networking with X-Forge, you *must* include the line `xfcUseNetwork(1);` in your `xfcAppInit()`. This is crucial and undocumented. For example:

```
INT32 xfcAppInit()
{
    // init default core features
    xfcUseDefaults();
    // init networking
    xfcUseNetwork(1);
    // create an instance of the application class
    RedFaction::create();
    return 0;
}
```

4.2 Implementing Collision-Based Triggers

Romero notes that if you want to implement a class for triggers that the player would walk into and trigger a game event, you have to walk through a “collision list” to see what kind of trigger the player hit. Here’s the code that figures it out:

```
void RFTriggers::onActivity( INT32 )
{
    if (mCollisionInfoList != NULL)
    {
        XFeCollisionInfo *collisionInfo = mCollisionInfoList->getFirstNode();
        while (collisionInfo != NULL)
        {
            // figure out what we collided with
            XFeCollisionInfo *nextCollisionInfo = collisionInfo->
>getNextSibling();
            // figure out what we collided with
            XFeNode *node = mGameGraph->getNode(collisionInfo->mObjectId);
            INT32 nodeType = node->getType();
            switch( type )
            {
                //-----
                // LEVEL END TRIGGER
                //-----
                case LEVELEND_TYPE:
                    if ( nodeType == PLAYER_TYPE )
                        ((Player*)node)->setLevelFinished( 1 );
                    break;
            }
            nextCollisionInfo;
        }
    }
}
```

5 References

Monkeystone Games: <http://www.monkeystone.com>

THQ: <http://www.thq.com>

Fathammer: <http://www.fathammer.com>