

The Easy Route To Console Online

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My Background

- Three years ago I had never made an online game
- In 2002 I was team lead on *MotoGP Online*, an Xbox Live launch title
- *MotoGP 2* (2003) won several awards for the online implementation
- Today Climax's Brighton studio has 5 games in development, for PS2, Xbox, and nextgen consoles: all are online



Why Be Online?

- Because it is cool
- Because it is a core feature of your game design
- Because your publisher wants it
- Because Sony insist on it



The Meaning Of Online

- An online game is not necessarily multiplayer
- Online gaming is about reaching out to a larger world than just the inside of one console
- If you don't manage to extend the scope of your game world, there is no point being online at all
- But this doesn't mean you have to build a massively multiplayer, persistent world. That's not what this talk is about



Key Online Features

- Play in realtime with other human beings
- Test your skills against other gamers
- Join a community of people with a shared interest in the game
- Download new content to extend the game
- Share your own data (custom skins, user created levels, recordings of cool bits of gameplay) with other people



Persistent Worlds

- To make the player care about your online world, you need persistence:
 - Actions must have consequences
 - A good reputation must last long enough to be worth striving for
 - If you meet someone cool today, they must still exist tomorrow



24/7 Server Uptime

- Persistent game worlds require persistent servers, but you don't want to be stuck with the ongoing cost and commitment of running a server farm
- A few minimal server functions can add persistent elements to what is otherwise a peer-to-peer game
- Let the API vendor (Microsoft, Gamespy) handle it
- Or you can leave it up to the gamers themselves: more on this later

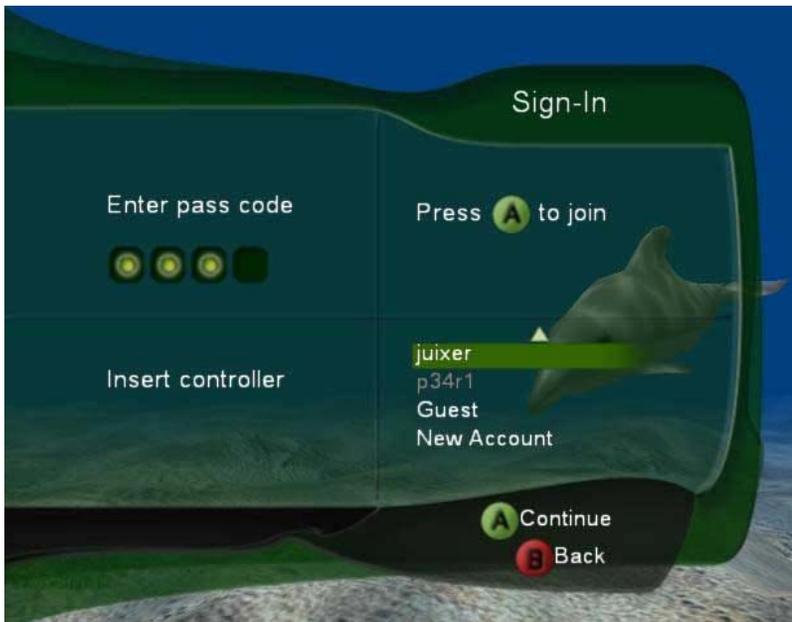


Xbox Live

- Xbox Live provides a well thought out, consistent online framework
- The XDK libraries and backend servers do a lot of the hard work for you
- Live games have to deal with many required features and TCRs: friends, voice, autoupdates, service messages, banned accounts, etc.
- Plan on making your offline mode “*Live Aware*”:
MotoGP 2 or *Project Gotham 2* are good examples



Live The Easy Way



- The Xbox Drop-in UI library (UIX) implements things like the sign-in process and friends screen
- You can skin it to match the style of your game



Not Live At All

- Even if you aren't supporting true online multiplayer, you can take advantage of some Live features for almost zero development effort:
 - The Xbox Statistics Manager (stats.xbe) makes scoreboards available from otherwise offline titles
 - The Xbox Content Download Manager (downloader.xbe) makes it trivial to add downloadable content to any game
 - Check out *Splinter Cell* and *Burnout 2*



PS2 Online

- PS2 has less standard infrastructure than Xbox
- No pre-written UI components
- But there are also fewer restrictions, eg. voice support is optional
- Sony provide the SCE-RT libraries, but servers are normally hosted by the publisher. This can vary so check with both SCEA and SCEE
- Gamespy provide both an SDK and hosting service



How Long Does It Take?

- *MotoGP Online* had 7 weeks core development time, followed by a month of beta
- We had 5 programmers working exclusively on the online code and user interface
- This is not recommended! Give yourself more time
- On the other hand, UIX didn't exist back then. Using that, Xbox exclusive online could be done faster



Task Breakdown

- 40% User interface
- 20% Networked gameplay
- 15% Required online features (sign-in, matchmaking, friends, voice)
- 10% Optional online features (scoreboards, downloadable content)
- 10% Integrating online features into singleplayer
- 5% Testing / certification



Online UI Is Hard

- Most games have very simple UI requirements
- UI is typically assigned to a junior level programmer
- Online UI is an order of magnitude more complicated. It takes time, is hard to get right, and is critically important
- Put your best coders on it
- Let the trainees write your renderer if need be: that is simple in comparison
- Really, I'm not joking!



Team Structure

- Online design is hugely affected by technical limitations
- The most dangerous places are the overlaps between design, UI, networking, and game physics
- Specialists tend to neglect the joins between areas
- I believe the details of an online game are best designed by a programmer, ideally the same person who will be coding the UI and high level networking
- Make your physics guy responsible for the low level networking as well



Scoreboards

- An online hiscore table is a great way of adding persistence to the game world
- On Xbox you can use stats.xbe: no need to write any network or UI code yourself
- Only one person can be ranked #1, but you must try to keep the scoreboards relevant for everybody
- Beware of cheating!



Cheating

- Cheating is the bane of online gaming: be paranoid
- Hacked executables are less likely than on PC
- Antisocial behaviour: backwards riders in *MotoGP*
- People will exploit the rules of the game:
 - Slipstream pausing in *MotoGP*
 - Taking advantage of collision detection bugs
 - Camping on spawn points
 - Disconnecting to avoid negative scores



Patching

- A console is a fixed, unchanging platform, but the online environment is constantly evolving. What works today may not still work tomorrow
- Xbox Live titles are required to support autoupdates
- PS2 has no standard patching system, but you can roll your own using DNAS to authenticate code downloads
- We released two patches for *MotoGP Online*, and one for *MotoGP 2*
- Keep your build machines around, just in case!



Downloadable Content

- New business model: give the game away for free, then charge for content
- Or you can release free content to extend the game lifespan
- On Xbox you can use downloader.xbe: no need to write any network or UI code yourself



Content Certification

- Downloadable content needs to be certified just like the game itself
- Certification costs time and money
- Weekly content updates would not be a good idea!
- Batch up several packages, certify them all in one go, then stagger the release dates
- Or certify content along with the original game, but hold back the release



Player Created Content

- On PC, user mods can greatly extend the lifespan of a game (*Counter-Strike*, anyone?)
- On console this is limited by technical, security, and certification issues
- You have to build any editors into the game itself
- Data can be uploaded to online servers, or sent directly from peer to peer, or you can just display raw data values and let the players take it from there



Know Thy Gamer

- Online gamers are hard-core. They have enthusiasm, commitment, the occasional good idea, and most importantly, lots of spare time
- If you let them, they will put incredible amounts of effort into supporting your game
- A small number of dedicated, hard-core fans can do things that will be appreciated by huge numbers of more casual players



File Sharing The Easy Way

- This is the bike livery editor from *MotoGP 2*
- We didn't bother writing any code to transfer designs within the game
- But we did display raw numeric values, so players could post their designs on websites



Player Created Bike Designs



Fan Websites

- A good website can add a lot of depth to your game
- If you are lucky, someone will set one up for you
- Obviously you can't count on this, but you can do some things to encourage it:
 - If anyone remotely sensible sets up a fan site for your game, spend some time hanging out there
 - Give them screenshots and developer interviews: whatever it takes to help the site grow
 - You could offer to pay their hosting fees



Fan Site Scoreboards

xblRacing Community - xblRacing Lap Records - Microsoft Internet Explorer

← Back → → → → File Edit View Favorites Tools Help Address http://www.xbl racing.com/forums/lap/la

Show Riders From: All Riders Go

Show Lap Records For: MotoGP 2 Go

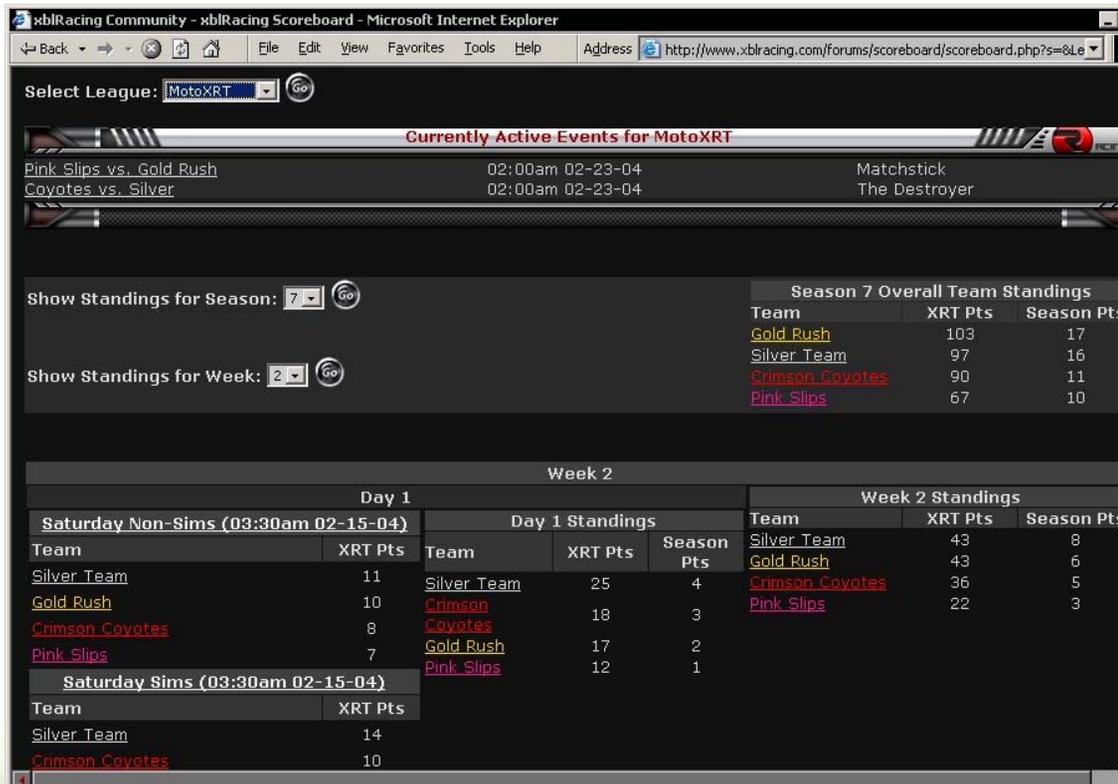
Pages (25): << 1 [2] 3 >> ... Last >>

Rider	Rank	Total	Suzuka	Phakisa	Jerez
Starks	1	21:38.31	01:32.78	01:07.98	01:14.50
crashman	2	21:46.96/ 00:08.65	01:33.00/ 00:00.22	01:08.35/ 00:00.37	01:14.97/ 00:00.00
Desert Storm 42	3	21:52.23/ 00:13.82	01:33.67/ 00:00.99	01:08.97/ 00:00.94	01:15.72/ 00:00.00
Wr3ckogniz3	4	21:56.07/ 00:17.76	01:35.40/ 00:02.62	01:09.15/ 00:01.17	01:15.25/ 00:00.00
x Matt x	5	22:03.27/ 00:24.96	01:34.28/ 00:01.80	01:09.50/ 00:01.52	01:16.32/ 00:00.00
XMac	6	22:08.74/ 00:30.43	01:35.55/ 00:02.77	01:09.72/ 00:01.74	01:16.87/ 00:00.00
The Muleskinner	7	22:13.03/ 00:34.72	01:35.70/ 00:02.92	01:10.22/ 00:02.24	01:17.23/ 00:00.00
knero1	8	22:16.65/ 00:38.34	01:35.92/ 00:03.14	01:10.32/ 00:02.34	01:17.22/ 00:00.00
Riko Ninja	9	22:16.69/ 00:38.38	01:35.98/ 00:03.20	01:10.18/ 00:02.20	01:17.20/ 00:00.00
Jake75	10	22:16.76/ 00:38.45	01:35.12/ 00:02.34	01:10.38/ 00:02.40	01:17.08/ 00:00.00
Rudawakening	11	22:17.19/ 00:38.68	01:35.98/ 00:03.20	01:10.10/ 00:02.12	01:17.75/ 00:00.00
Redmanpete X	12	22:20.85/ 00:42.54	01:36.80/ 00:04.02	01:10.30/ 00:02.32	01:16.68/ 00:00.00
Unstoppable One	13	22:23.55/ 00:45.24	01:36.57/ 00:03.79	01:10.92/ 00:02.94	01:17.55/ 00:00.00
BGH Ecko	14	22:23.85/ 00:45.54	01:36.05/ 00:03.27	01:10.98/ 00:03.00	01:17.35/ 00:00.00
DR Super	15	22:23.92/ 00:45.61	01:36.25/ 00:03.47	01:10.67/ 00:02.98	01:17.72/ 00:00.00
X NeO GeNetix X	16	22:26.75/ 00:48.44	01:36.12/ 00:03.34	01:10.85/ 00:02.87	01:18.37/ 00:00.00
VipERWarriOR	17	22:27.71/ 00:49.40	01:36.82/ 00:04.04	01:10.83/ 00:02.85	01:17.82/ 00:00.00
coolwuy2002	18	22:27.80/ 00:49.48	01:36.37/ 00:03.59	01:10.87/ 00:02.98	01:17.03/ 00:00.00

- This page, from xbl racing.com, is a great web scoreboards implementation
- Time for Climax to implement this feature: zero!



Fan Site Team Leagues



The screenshot shows a web browser window with the URL <http://www.xblracing.com/forums/scoreboard/scoreboard.php?s=8Le>. The page is titled "xblRacing Community - xblRacing Scoreboard - Microsoft Internet Explorer".

At the top, there is a "Select League:" dropdown menu set to "MotoXRT" and a "Go" button. Below this is a section for "Currently Active Events for MotoXRT" with two events:

- Pink Slips vs. Gold Rush (02:00am 02-23-04) - Matchstick
- Coyotes vs. Silver (02:00am 02-23-04) - The Destroyer

Below the events, there are two "Show Standings" sections:

- "Show Standings for Season: 7" with a "Go" button. This leads to a table titled "Season 7 Overall Team Standings":

Team	XRT Pts	Season Pts
Gold Rush	103	17
Silver Team	97	16
Crimson Coyotes	90	11
Pink Slips	67	10

- "Show Standings for Week: 2" with a "Go" button. This leads to a table titled "Week 2 Standings":

Team	XRT Pts	Season Pts
Silver Team	43	8
Gold Rush	43	6
Crimson Coyotes	36	5
Pink Slips	22	3

The "Week 2 Standings" table is further divided into "Day 1" and "Saturday Sims (03:30am 02-15-04)".

Day 1 Standings:

Team	XRT Pts	Season Pts
Silver Team	25	4
Crimson	18	3
Coyotes	17	2
Gold Rush	12	1

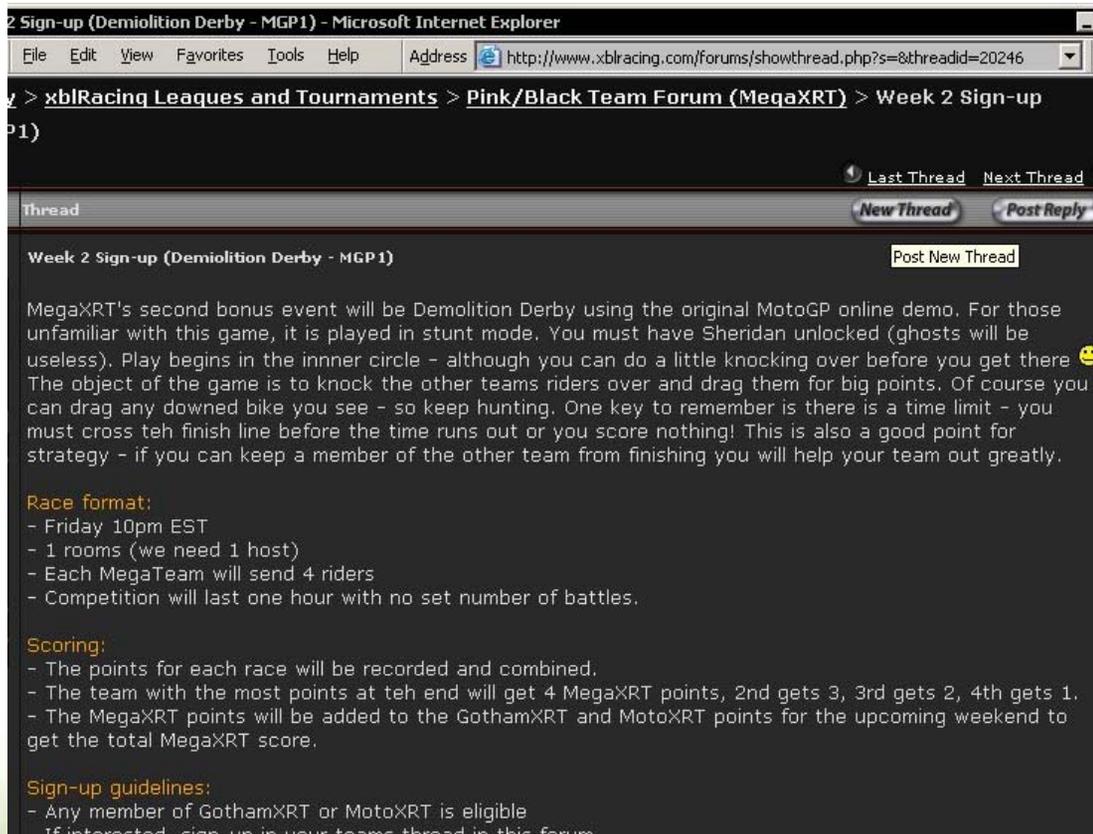
Saturday Sims (03:30am 02-15-04):

Team	XRT Pts
Silver Team	14
Crimson Coyotes	10

- Team leagues are a great feature, if you have time to implement them
- We didn't bother, but they happen all the same



Custom Game Modes

A screenshot of a Microsoft Internet Explorer browser window displaying a forum thread. The browser's address bar shows the URL: http://www.xblracing.com/forums/showthread.php?s=&threadid=20246. The forum breadcrumb navigation is: xblRacing Leagues and Tournaments > Pink/Black Team Forum (MegaXRT) > Week 2 Sign-up (MGP1). The thread title is "Week 2 Sign-up (Demolition Derby - MGP1)". The main text of the thread describes the "Demolition Derby" game mode, mentioning it uses the original MotoGP online demo and is played in stunt mode. It details the rules, such as needing the "Sheridan" unlocked and the objective of knocking over other teams' riders. It also includes sections for "Race format" (Friday 10pm EST, 1 room, 4 riders per team) and "Scoring" (points for placement, added to weekly totals).

Week 2 Sign-up (Demolition Derby - MGP1)

MegaXRT's second bonus event will be Demolition Derby using the original MotoGP online demo. For those unfamiliar with this game, it is played in stunt mode. You must have Sheridan unlocked (ghosts will be useless). Play begins in the inner circle - although you can do a little knocking over before you get there 😊. The object of the game is to knock the other teams riders over and drag them for big points. Of course you can drag any downed bike you see - so keep hunting. One key to remember is there is a time limit - you must cross the finish line before the time runs out or you score nothing! This is also a good point for strategy - if you can keep a member of the other team from finishing you will help your team out greatly.

Race format:

- Friday 10pm EST
- 1 rooms (we need 1 host)
- Each MegaTeam will send 4 riders
- Competition will last one hour with no set number of battles.

Scoring:

- The points for each race will be recorded and combined.
- The team with the most points at the end will get 4 MegaXRT points, 2nd gets 3, 3rd gets 2, 4th gets 1.
- The MegaXRT points will be added to the GothamXRT and MotoXRT points for the upcoming weekend to get the total MegaXRT score.

Sign-up guidelines:

- Any member of GothamXRT or MotoXRT is eligible
- If interested, sign-up in your teams thread in this forum

- If you make your game flexible enough, people will invent new ways to play it
- “*Demolition Derby*” events are popular in *MotoGP*



Fan Site Disadvantages

- Fan sites are unreliable and inconsistent in quality
- Publisher websites have access to extra features such as the Xbox Live Web Services
- But if you don't have the resources to do this properly yourself, amateur sites can be a great substitute



Online Relationships

- Gamers love to have direct contact with developers
- Many developers like to talk with gamers, too, and this can be valuable for both parties
- But your PR department or publisher may not agree!
- Work out a policy covering exactly who is allowed to say what, when, and to whom
- Expect plenty of irrational criticism, blame, and misinformed ranting. Stay calm and let the website moderators deal with it



Testing During Development

- You will need at least two devkits per programmer, and in some cases three
- Testing large game sessions requires as many devkits as the game supports players, often 8 or 16
- That's a lot of devkits!
- Many network errors are impossible to generate on demand, so you need to build in some way of simulating them. Testers cannot do this without help from the programmers



Testing At The Publisher

- Online testing requires a lot of people and a lot of hardware
- This is a pain, so there is a natural tendency to put it off for as long as possible
- Make sure QA are looking for any potential ways of cheating, because such problems are far more significant than in offline titles



Testing On The Internet

- The Internet is more unpredictable than you can possibly imagine
- Network simulation packages can help, but are no substitute for the real thing
- Be aware of NAT (Network Address Translation) issues
- It is no good if everyone is using the same ISP
- Get people to take devkits home with them
 - But insurance can be a problem



Testing By The Public

- PC games often rely on a public beta test
- This is not generally possible on console
- *Uh... this is a short slide!*



Testing Is Impossible

- Networks never do the same thing twice in a row
- Testing can demonstrate the presence of bugs, but it is often impossible to reproduce them
- The best solution is simply to avoid creating any bugs in the first place...
- Game developers are often used to being sloppy, then trusting QA to hammer on it until all the bugs go away
- Online coding demands a more careful approach



Localisation

- If you want your game to be playable across multiple territories, all language SKUs must be compatible
- This is easy if you submit a single version for all territories
- On *MotoGP 2* we did a simultaneous submission for America and Europe, followed by Japanese a month later
- That made life difficult when we subsequently had to create a patch that worked with both versions



The End

- Any questions?

