IRI

Software and Systems Engineering Workbook
1. Games and the XMOS World

(additions and small revisions 05.Dec.18) orig. 14.November.2018 01:00 CET

Focus 1:

Games

The XMOS World

"X" (eXtreme) Multiplayer Online Simulations

BACKGROUND and REVIEW --- The World in which the Games Operate

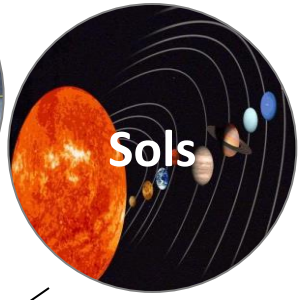
First we consider some general points about OASIS as an environment for activities, including games. OASIS is not itself a game but an operational environment for integrating games with many other activities including trading and commerce of many types, collaborations on projects and businesses, education through training that also employs games, and other forms of entertainment and leisure.

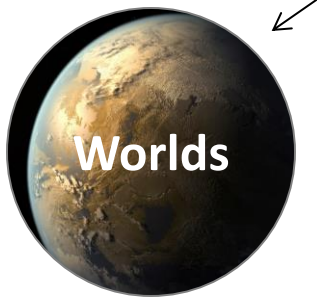
Then we proceed to XMOS games and the environments in which the games are played, online and in arena settings, within and outside of OASIS.

A player (user) can do many things within an OASIS world and this includes playing a GAME. For the most part, the games with be produced and managed by the XMOS business unit of IRI. Progressively, any XMOS game activities can include a variety of interactions with other OASIS activities (e.g., commerce, trading, wagers, project collaborations, etc.)

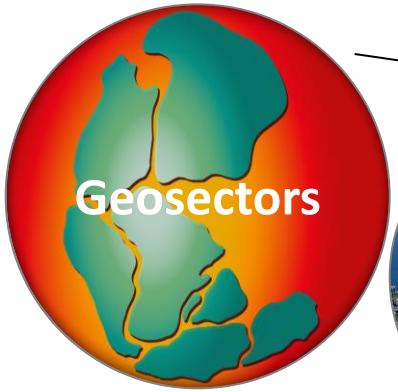
There are also options enabling a user to move from a point (activity) within OASIS into another game (not an XMOS game) and this can be explored from a business-advantage perspective).

Next: the divisions within OASIS, from the abstract universe and sectors, down to districts, tracts, and smaller divisions → →





These are abstractions and "future-tech" for right now, and the initial series of XMOS games do not require any of this, but it is worth understanding the Bigger Picture in which games and gameplay moves and will move…



These are also abstractions and "future-tech" for right now, but XMOS games will emerge with activities that are at the level of Tracts, Quads, and later the larger Districts within OASIS.

Arena competitions, indoors and enabling multi-level playing areas, will map and correspond with OASIS Quads and smaller regional units.

Quads, Hecs, Plots, Subplots, Veks
(increasingly smaller subdivisions of terrain and property divisions (including buildings and other constructed divisions) therewithin)

[Note: OASIS Quads correspond to OpenSimulator regions that are 256m x 256m in size, and OASIS Tracts correspond to OpenSimulator varregions that consist of multiple regions (thus, from 256m x 256m to 8192m x 8192m)]

Our focus here and now is upon Games.

Seriously new, different, challenging, technical mind-bender Games.

XMOS Games

X-factor, X-Files, eXtreme
Massive, Multiplayer
Online, Onsite
Simulation, Scene

Gentlemen, start your ENGINES ...

XMOS =
A suite of Games
(MMORPH, MMOS, including e-sports)

The Games are either pure-XMOS, designed and built by IRI, or they are from third-party partners (developer-providers)

Player enters the game through a portal in an OASIS location, but they do not necessarily need to be "active" in anything else within or about OASIS.
Depending upon the game design, there may be activities within the game that interact with some features (entities, objects, conditions) within some part of OASIS – or else they are quite separate. It's all specific to the game design, but all options can be accommodated.

← Player transit →

Pure XMOS Games

Online interaction (DW)

(potential) Onsite Arena interaction (RW)

True DR (Dynamic Reality) sensorimotor experience – (online) DW objects/events with RW media, and (onsite) RW experiences with DW media

← Player transit →

Partner Games

Online interaction (DW)

Player enters the game through a portal in an OASIS location, but they do not necessarily need to be "active" in anything else within or about OASIS.
There is (at least in the beginning and for most third-party games) nothing in the actual gameplay that involves or relates directly to anything in OASIS. However, outcomes in terms of points, prizes, powers, and other "gain/loss" events may (may!) have optional bearing and effect upon something within OASIS or upon a given player's performance abilities, etc., within other XMOS games.

OASIS is Geometry that is composed of entities in causal-set relationships. The entities have locations and attributes including mobile and interactive behaviors.

Ent

M-Level
definitions and code
(CSP, parallel-process and functional languages)

Relations between ents as individuals, groups, sets, complexes

O-Level
definitions and code
(OpenSimulator scripts; LSL)

Relations between objects and self-relations of animation and rendering

F-Level
definitions and code
(A-Frame, Unity, Unreal, Blender, Maya, AutoCAD, etc.)

"ACSM" code functions that perform tasks for operations on digital devices

XMOS Games
(software and media)

We may see something like this in the XMOS game, Detroit kNights, with the adventure-theme of Cyber Robin and the Hoods. Players have vehicles, of different customized and semi-custom designs. They have missions to complete, objectives to attain, objects to retrieve and take somewhere. In the process there are different types of events involving other players and the general “urban environment”. There are obstacles and there are helpful aids and short-cuts. There are decision-points that flash up demanding instant decisions – slow down and help a woman being attacked on the sidewalk or being car-jacked, or keep on with the mission. Maybe she is really a “lure” working with a gang of thugs to get you to slow down, and they will get your car! Maybe she is for real and needs help. Maybe she will provide a clue and some assistance to you to get to your destination. All of this is in XMOS, and more!

Now, we turn to Implementation and how things work in the world of software, servers, and individual points of connection and *Action*…

XMOS games are developed within **OpenSimulator**, a well-established environment described as “an open source multi-platform, multi-user 3D application server. It can be used to create a virtual environment (or world) which can be accessed through a variety of clients, on multiple protocols. It also has an optional facility (the Hypergrid) to allow users to visit other OpenSimulator installations across the web from their 'home' OpenSimulator installation. In this way, it is the basis of a nascent distributed Metaverse.“

An XMOS game takes place among players using avatars and a variety of objects including vehicles and other machines, all acting within OpenSimulator **regions** and **varregions** and super-collections of these, known as **estates**.

All of the “mechanics” for creating and managing objects (including avatars and mobile vehicles, surfaces, the overall landscape, and for communications with multiple users (players and others with access) are provided through the OpenSimulator software which is unique in its openness for enabling many types of data and program formats and for the ability to accommodate new modules and extensions.

OpenSimulator Primary Features:

- Supports online, multi-user 3D environments as small as 1 simulator or as large as thousands of simulators.
- Supports 3D virtual spaces of variable size.
- Supports multiple clients and protocols - access the same world at the same time via multiple protocols.
- Supports real-time Physics Simulation, with multiple engine options.
- Supports clients that create 3D content in real time.
- Supports in-world scripting using LSL/OSSL.
- Provides unlimited ability to customize virtual world applications through the use of scene plugin modules.

OpenSimulator Main Feature Matrix:
http://opensimulator.org/wiki/Feature_Matrix

World

(Excerpt showing World-type features)

Feature Name	Core OpenSim?	Notes
Terrain	Yes	
Sun	Yes	
Wind	Yes	
Cloud	Yes	
Vegetation	Yes	
Sound	Yes	Queueing sounds will be supported in the forthcoming OpenSimulator 0.7.6. However, not all sound facilities have been well tested (if there are gaps please set this back to partial and list them).
Minimap	Yes	
World Map	Yes	
Neighbouring regions	Yes	Regions can neighbour each other, even if hosted on different servers.
Archiving	Yes	Entire regions can be saved and loaded as OpenSim Archives.
Physics	Yes	There are several physics modules bundled with OpenSim, but only the ODE module (Open Dynamics Engine) really works.
Parcel management	Yes	
Region settings	Yes	
Region / Parcel Lightshare / Windlight	Yes	Lightshare implemented March 30,2010 (Git: ec637e2b8). LightShare/WindLight from Region to Client enables full environmental control of the simulation, providing a more complete immersive experience. Supported in most V3 and some modified V1 Viewers.
Telehubs	Yes	
Estates	Partial	Partial estate support is implemented. However, the only way to manipulate estates currently is via direct changes to the database.
Avatar limits	Yes	Avatar limits were implemented in OpenSimulator 0.7.2.
Prim limits	Yes	Prim limits where implement in OpenSimulator 0.7.2.
Teleports	Partial	Teleporting in can be done to any point in or off world (if hypergrid enabled) however, Blocking teleports to a parcel is not currently enforced.
Megaregions	Expenmental	This is a system that allows regions to be created on the simulator that are larger than 256m x 256m. This is implemented purely on the server without requiring a specially adapted client. However, this is not fully implemented and you may encounter various issues with megaregions.
NPCs	Yes	Allow NPCs to be created and manipulated on a region. This is handled purely on the server-side - NPCs are different from bots controlled as external clients via a library such as libomv.
Pathfinding	No	

Using samples to illustrate examples for XMOS Games.

Here are some sample scenes from different grids (worlds) created and operating within OpenSimulator.

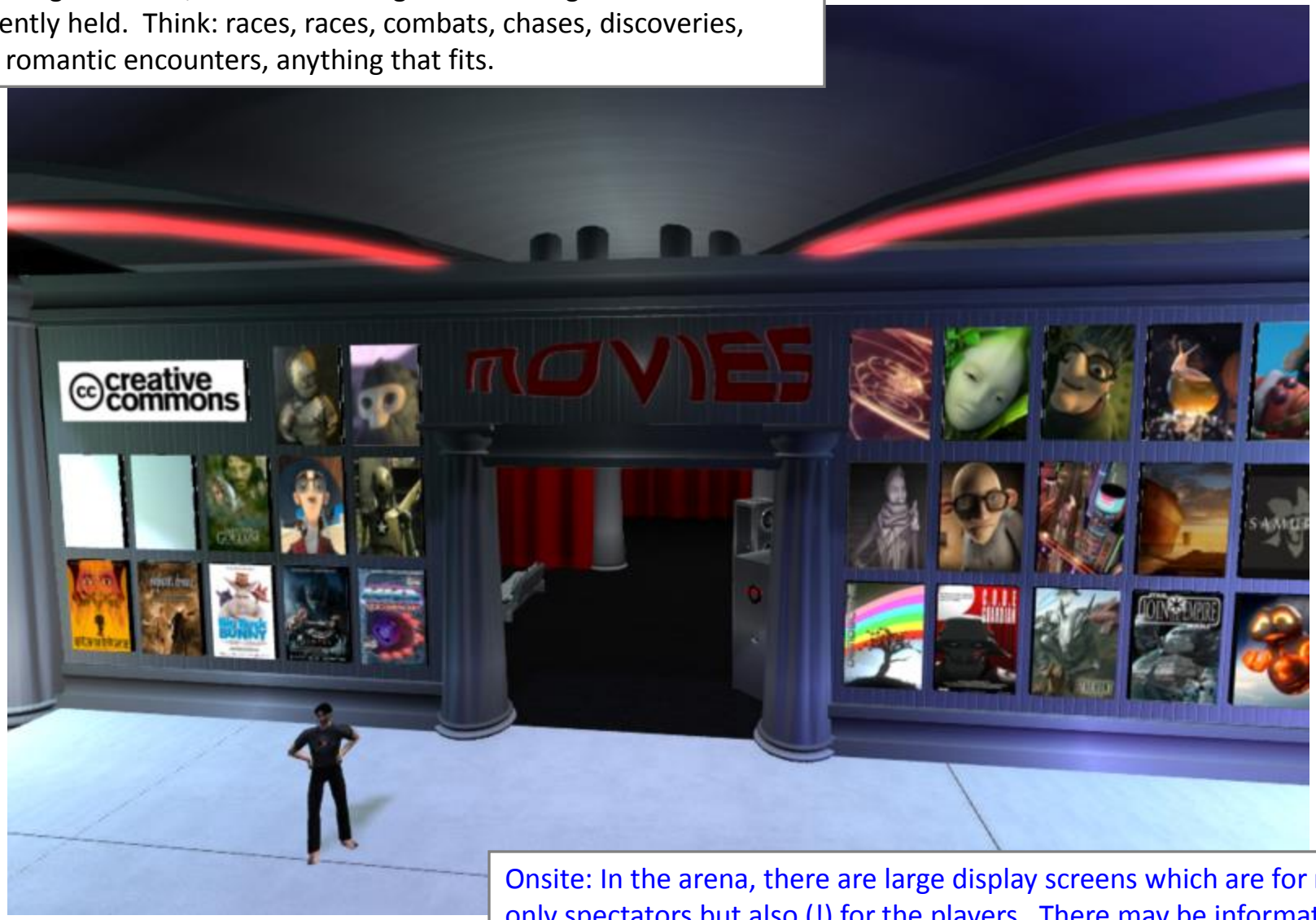
These have no connection with XMOS games or any of the prospective games to be created. But imagine for a moment that these scenes have been constructed by IRI's XMOS Game Construction Team.

For each of these there is a brief comment about how this, as a DW scene and context within an ***online*** game, can use certain RW content, including something from a "live" or "recent" Arena tournament.

For each of these there is also a comment about how this, as a DW scene and context, can be used within an ***Arena*** competition that is otherwise completely RW in nature.

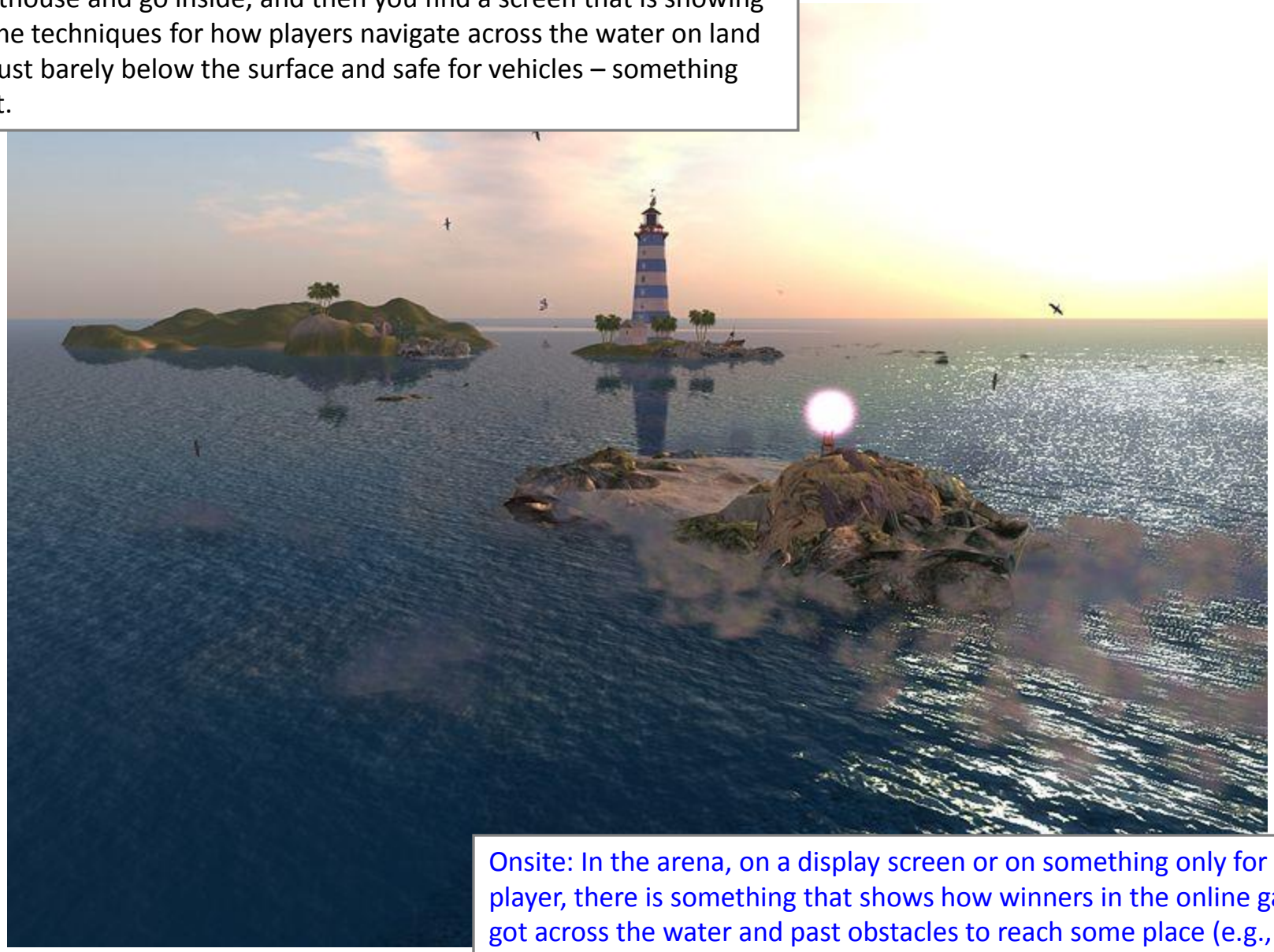
Remember:
DW = digital, virtual, computer-generated world effects
RW = real-world effects and experiences (which could come in the form of video/audio/images or other sensory experiences

Online: There could be a big marquee or screen on the outside here, or else as one goes inside, and it is showing a live Arena game or one that was recently held. Think: races, races, combats, chases, discoveries, parties, romantic encounters, anything that fits.



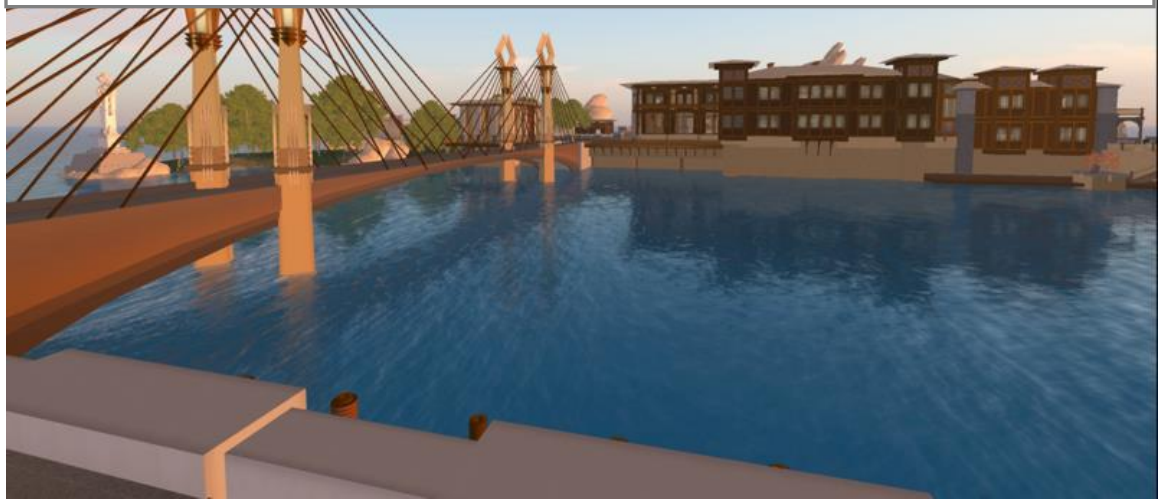
Onsite: In the arena, there are large display screens which are for not only spectators but also (!) for the players. There may be information here that is given, even for a momentary period, that pertains to secret paths, shortcuts, easy work-arounds, ways to avoid barriers, obstacles and conflicts, ways to get to the desired goal faster and win more points.

Online: There could be a pop-up screen or else you have to get over to the lighthouse and go inside, and then you find a screen that is showing you some techniques for how players navigate across the water on land that is just barely below the surface and safe for vehicles – something like that.



Onsite: In the arena, on a display screen or on something only for each player, there is something that shows how winners in the online gaming got across the water and past obstacles to reach some place (e.g., the lighthouse, where something magical or otherwise important is kept and ready to be found and taken).

Online: There may be scenes, live or pre-recorded, of some real parts of a city, that are “enough like” what is in the online game, and players must figure out the similarities and “congruences” and then they will know better what to do in their gameplay..

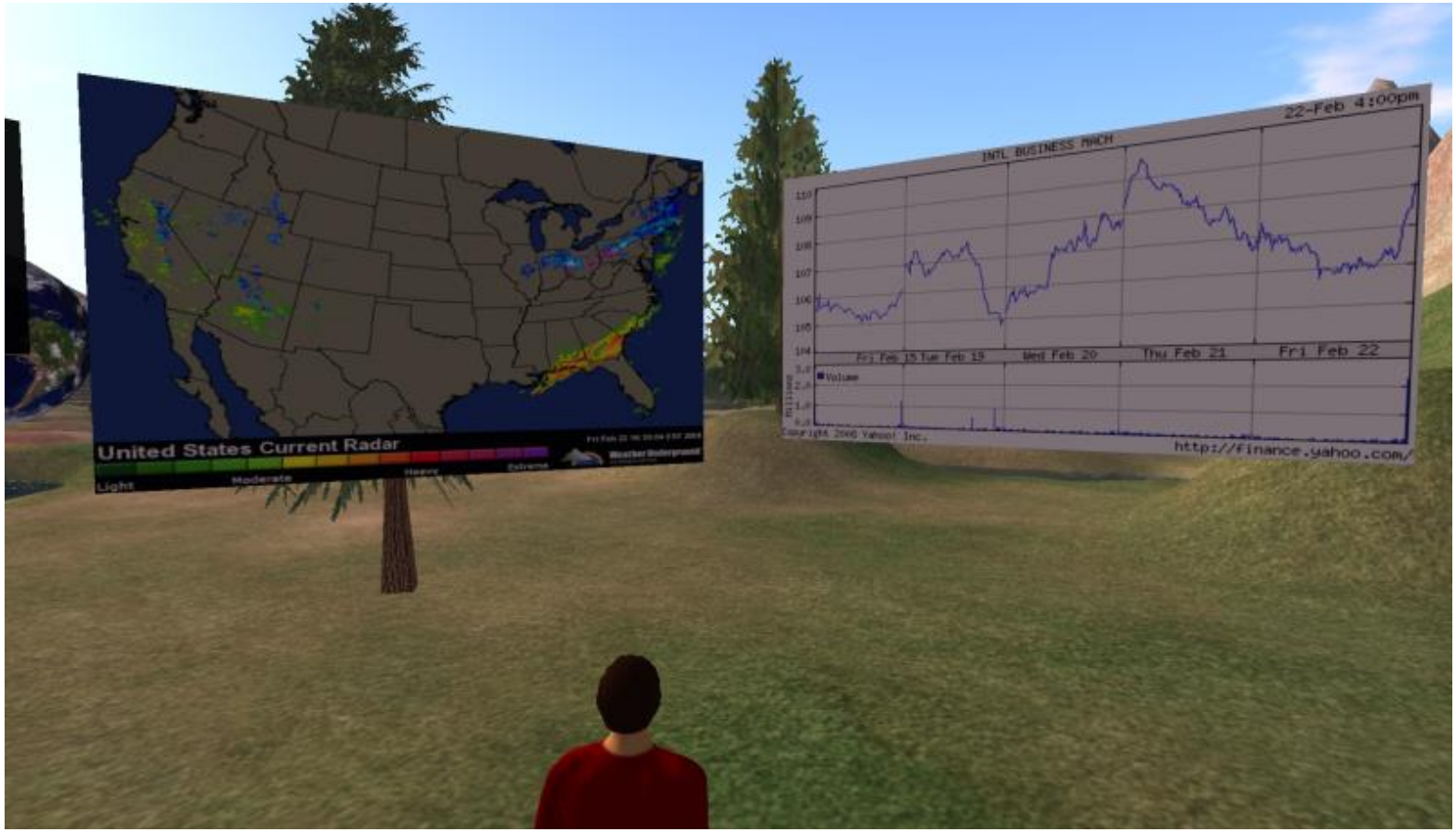


Onsite: In the arena, the players can see how in the online game, some winning players and some losing ones contended with the terrorists who had seized one of these big buildings and the people inside.

Online: Something from the real world gets shown to help players know where “bad guys” may be lurking and how to either avoid them, get past them, or get ride of them.

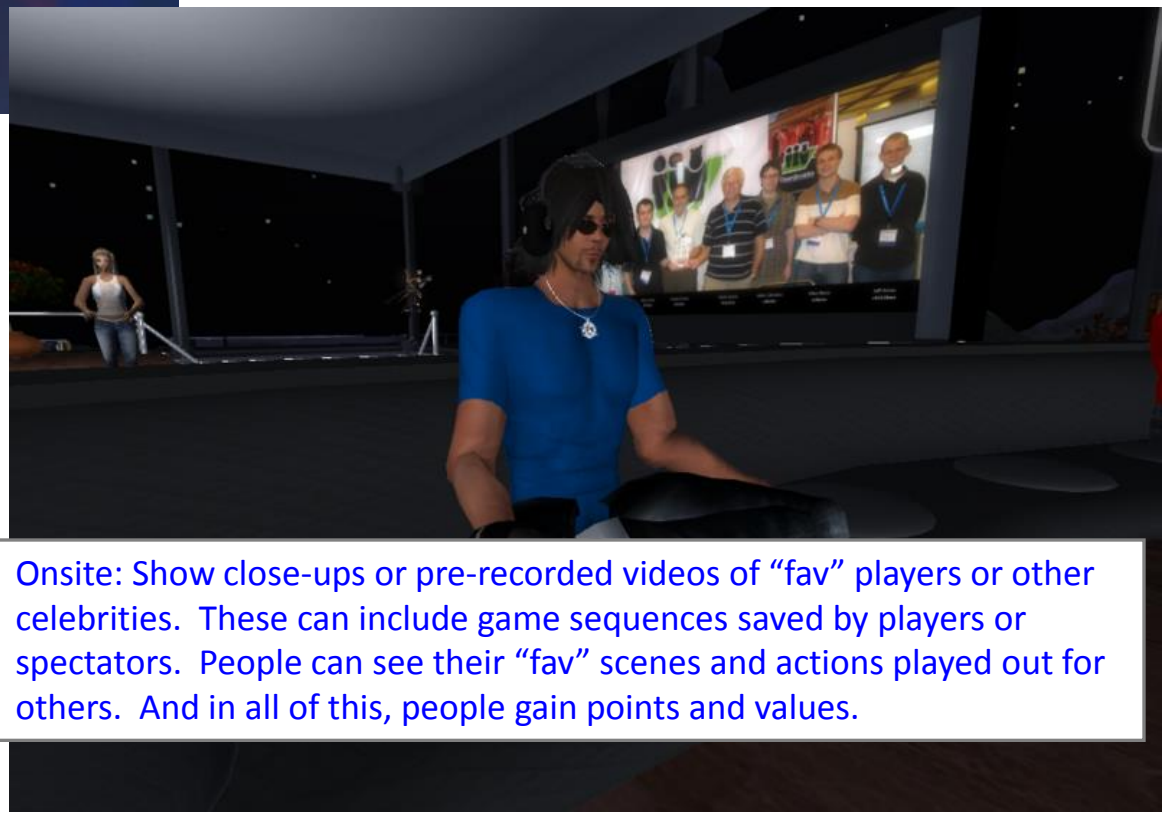
Onsite: Show how the players did or did not fare well in the online gameplay.

Online: Great example of having screens that will show scenes from the real world, either from arena gameplay or anything else that is relevant. Also, this can be for displaying advertisements and related “soft-advert” content from sponsors.



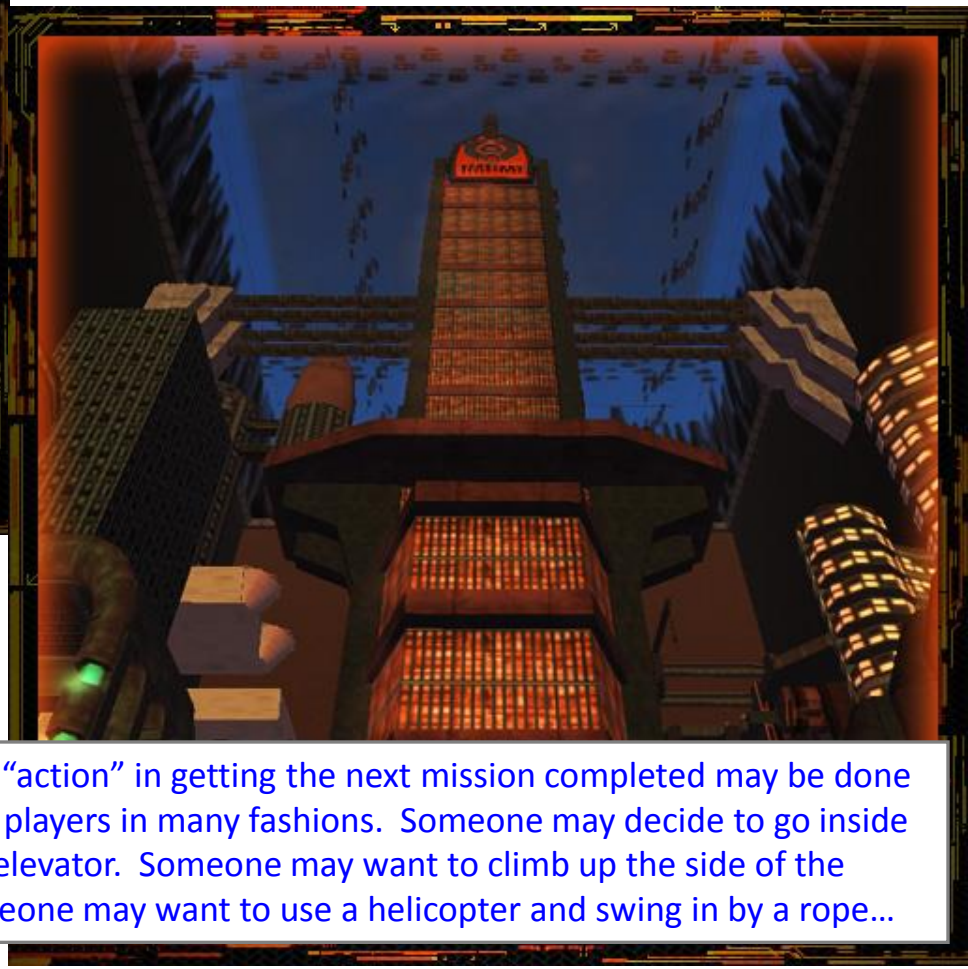
Onsite: Basically the same principle as in the example for online play.

Online: Show close-ups of your “fav” players in the Arena, or anywhere else. Avatars are designed to fit player personalities.



Onsite: Show close-ups or pre-recorded videos of “fav” players or other celebrities. These can include game sequences saved by players or spectators. People can see their “fav” scenes and actions played out for others. And in all of this, people gain points and values.

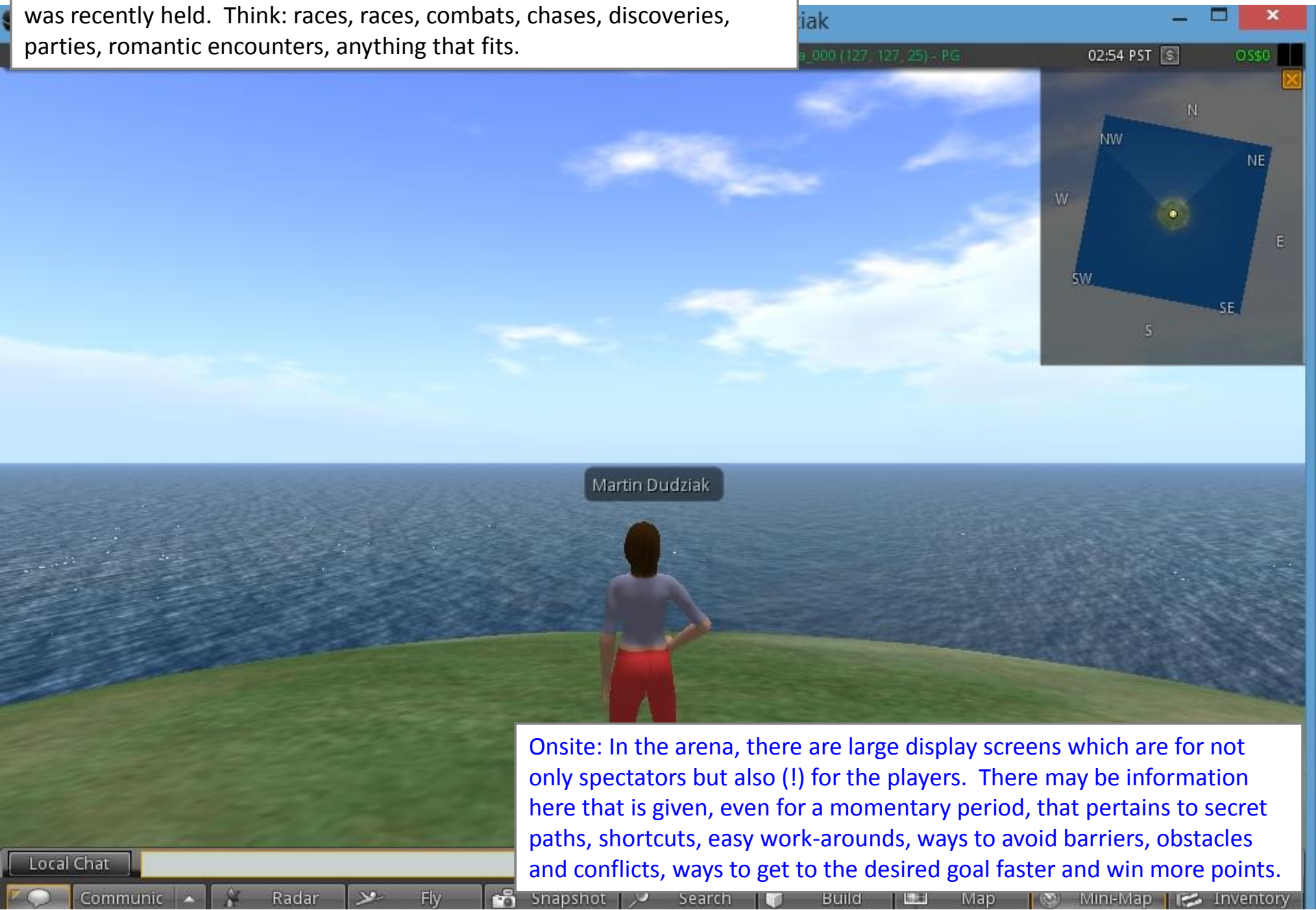
Online: Imagine UAV action in this environment, and then the UAV if properly empowered (and if the player has sufficient points and abilities) can literally fly into a room on the 80th floor…



Onsite: The “action” in getting the next mission completed may be done by different players in many fashions. Someone may decide to go inside and up the elevator. Someone may want to climb up the side of the tower. Someone may want to use a helicopter and swing in by a rope…

Online: There could be a big marquee or screen on the outside here, or else as one goes inside, and it is showing a live Arena game or one that was recently held. Think: races, races, combats, chases, discoveries, parties, romantic encounters, anything that fits.

eriment in OASIS using OpenSimulator



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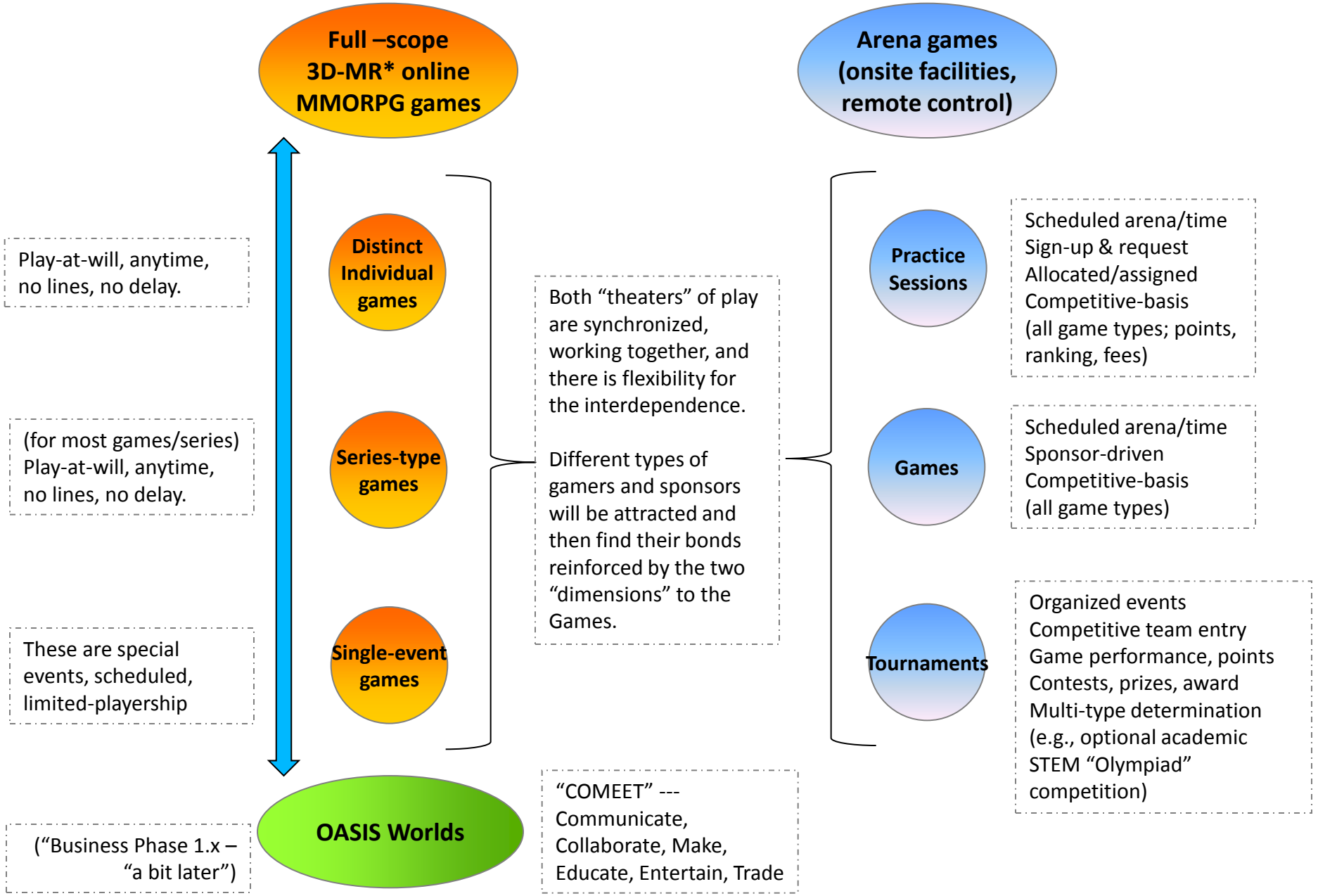
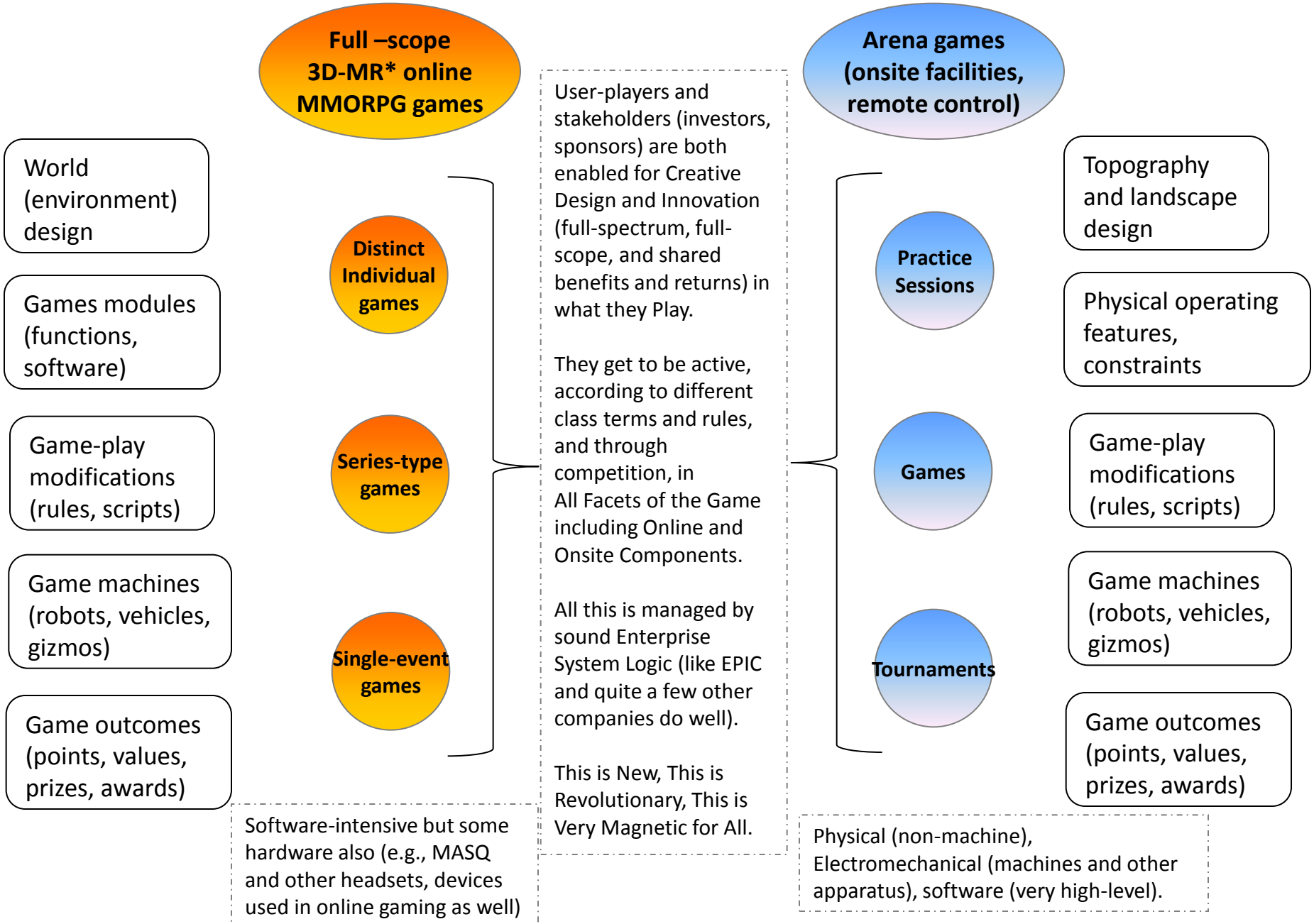
ADDITIONAL MATERIAL --- some of this is older, some is background



* “MR” = VR + AR + any RW (real-world) media), as desired in game-flow design.



Some Examples of Relationships

Full –scope 3D-MR* online MMORPG games

NIKE wants and supports a game that also has runners & other athletes

Distinct Individual games

Goldman Sachs &IBM jointly back a game that shows well how quantum computing can be used

Series-type games

FIFA, Arsenal and Chelsea join fan-based sponsorship of “Extreme Football” with battle-interruptions and high-adrenaline chaos.

Single-event games

Mercedes and BMW each sponsor competing teams in the ongoing series, “People vs. Robot Road Warriors”

INTEL sponsors a once-a-year Game that coincides with the ISEF (Science Fair)

Investors may want to direct certain assets (funds, other resources, other “muscle”) toward specific game types, arenas, tournaments, even specific teams or individuals (“stars”)

Sponsors will almost certainly have such preferences. They need to know that they Will be Satisfied by Us.

Grantors are usually staying farther removed, through the terms of the grants.

Clients really want Specific things that the Company will find, get, make, deliver to them.

Customers want to buy things we directly offer for sale.

Partners are a “special-case” of companies, usually, who enter into some formal or informal Joint Venture.

Arena games (onsite facilities, remote control)

Practice Sessions

Spectators see certain ads, players another, viewers still another

Arenas need to be seen, need to stand out, & need Corporate Names & Logos

Games

If chess moves are named after players, Game styles can be named after sponsors

Tournaments

“Toshiba Terror” piloted by Azuki takes on “Amazon Medusa” commanded by The Gorgon

James Halliday, founder of Gregarious Simulation Systems, left in his will…

IRI's XMOS unit produces games that can be played by individuals and teams of different types, both in purely online forms and in physical arena (stadium) settings, in both cases employing environmental functions and features from digital ("virtual") worlds (DW) and physical ("real") worlds (RW).

The online gaming influences and affects many aspects of what is the gameplay in tournaments and special competitions held in the arenas, and also vice versa. This is a completely new architecture, style and play for games including both MMORPG (MMOS) and e-sports types that have all been limited to digital electronic technologies having little or no engagement with any "live, real-world" experience.

XMOS games emerge as games for entertainment and professional competition within the context of a larger environment that brings together, very uniquely and for the first time, the powers of DW + those of RW, including everything connected with virtual reality (VR) and augmented reality (AR) technologies.

This larger environment is known as

OASIS

Open Autopoetic Social Intelligence Synthesis

It's full of wonderful things. So much AI (artificial intelligence) and Real Intelligence that we call it SI – Synthetic Intelligence.

Robots and cybots that learn and can even program and train each other. Cool.

Everything is designed and designable to
Cultivate
COMEET

Communicate – cOllaborate – Make – Educate – Entertain - Trade

	Investor	***Sponsor***	***Grantor***	***Client***	***Customer***
Reasons for putting their capital and other value into the Company and the Games	Company Teams Technology Individuals	Company Teams Technology Individuals	Company affiliated Institute(s) Individuals	Company	Company
Reasons for putting their capital and other value into the Company and the Games	Profitable Returns $$$ + "Equity-plus" Other gains (tbd)	Adverts Visibility Promotions Corp. responsibility Data Information	Grant objectives	Data Information Knowledge	Specific Products & Services

And Everything is designed to
Constant Generate Revenue – and Residual Income Streams
By generating
Every Step of the Way, Data → Information → Knowledge

Main System Architecture Qualities and Characteristics

- Robust load-balancing Network Computing (Parallel, Distributed, Cloud-like)
- Decentralization in performance as well as information processes
- Privacy-preserving, Anonymity-enabling
- Fault-tolerant to the maximum (fail-safe)
- Autopoetic, Cybernetic (learns as it goes and grows)
- Self-stabilizing, Error-correcting, Self-optimizing
- Functional algorithms and software integrated with object-oriented principles for modularity and interoperability
- Accommodates standard and popular software engines, device interfaces
- Open-interface capabilities for partner and sponsor systems (gaming, e-commerce, trading, gambling, etc.)

Some Other Highlight-Points

- Different types of machines and robots can play in a given Game (the game-rules decide)
- Playing the Game and excelling in the Game is (offers, promotes, can even require for advancement) a built-in STEM learning process ("You want to advance to X and get Y points? Take this quiz…")
- Bring in serious-level robotic, VR, AI, and other skilled people to compete, to show-off, to win, and in the process get hugely creative, inventive and wildly attractive machines, environments, special effects, etc.
- Omni-Terrain is the only way to travel (stories of the "Aquaterraship," Sec-Nav, and more)
- Trucks with wheels and track, tanks with tracks and wheels, Mars Exploration Rover (Spirit and Opportunity), etc. ("Hey, what's next? Go read "Armada," perhaps, and use your imagination…)
- People do not want "Back to 'Back to the Future'" or Retro-tech , or HO-scale model railroads. They want "Tomorrow, the Stars" *

* A deliberate tribute to the genius of Robert Heinlein

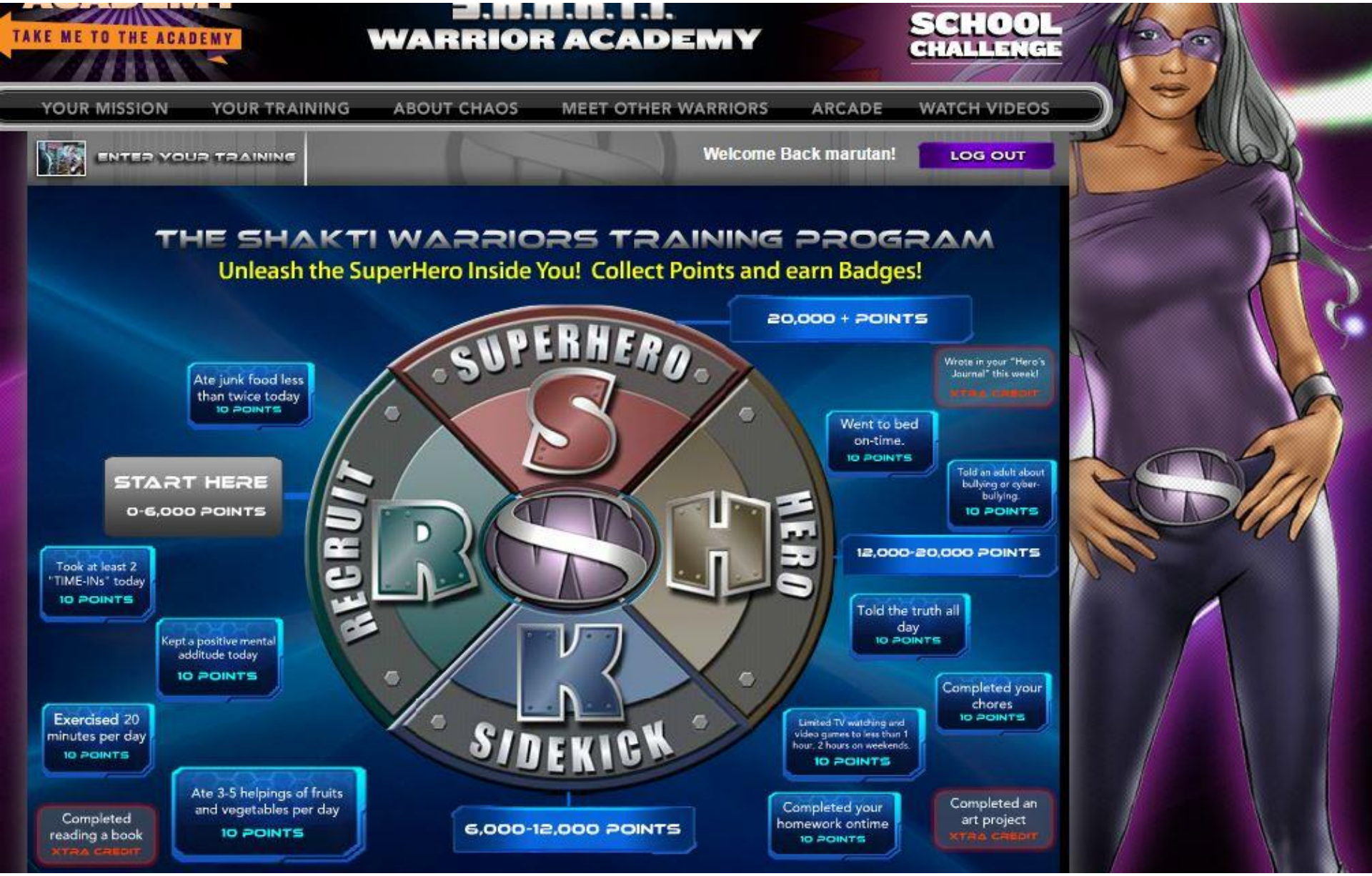
In closing:

I would very much like to have characters and activities similar to these (following 4 slides) included somehow in the XMOS Games.

These are particular meaningful in many ways. The proof is in how successful the SHAKTI Academy program was with kids - in really rough, tough, traumatized living environments and schools in urban America – related so well, and improved their lives . They got energized, got inspired, got revitalized, got empowered, got a New Life Going.

My real purpose and motivation in all this? Very similar to that of the “recently-late” great Stan Lee, “Mr. Marvel Comics” and the creator of Spider Man and many more heroes. Go see the final slide here.


VISIT THE
S.T.E.A.M. ACADEMY
TAKE ME TO THE ACADEMY
S.H.A.K.T.I.
WARRIOR ACADEMY
CHECK OUT THE
SCHOOL CHALLENGE
YOUR MISSION
YOUR TRAINING
ABOUT CHAOS
MEET OTHER WARRIORS
ARCADE
WATCH VIDEOS
JOIN NOW!
Username: marutan
Password:
LOGIN
DIGITAL COMICS ONLINE
SHAKTI WARRIORS
LEVEL UP!!
2ND YEAR ACADEMY
• New Ways to Earn Points
• You Must Have Completed Your 1st Year Mission
• Coming Soon: Redeem Your Orb Points for Points and Prizes
• Meet the Academy of Elders


TAKE ME TO THE ACADEMY
WARRIOR ACADEMY
SCHOOL CHALLENGE
YOUR MISSION
YOUR TRAINING
ABOUT CHAOS
MEET OTHER WARRIORS
ARCADE
WATCH VIDEOS
ENTER YOUR TRAINING
Welcome Back marutan!
LOG OUT
THE SHAKTI WARRIORS TRAINING PROGRAM
Unleash the SuperHero Inside You! Collect Points and earn Badges!
20,000 + POINTS
SUPERHERO
RECRUIT
HERO
SIDEKICK
Ate junk food less than twice today
10 POINTS
Wrote in your "Hero's Journal" this week!
XTRA CREDIT
Went to bed on-time.
10 POINTS
START HERE
0-6,000 POINTS
Told an adult about bullying or cyber-bullying.
10 POINTS
12,000-20,000 POINTS
Took at least 2 "TIME-INs" today
10 POINTS
Told the truth all day
10 POINTS
Kept a positive mental additude today
10 POINTS
Completed your chores
10 POINTS
Exercised 20 minutes per day
10 POINTS
Limited TV watching and video games to less than 1 hour, 2 hours on weekends.
10 POINTS
Ate 3-5 helpings of fruits and vegetables per day
10 POINTS
Completed your homework ontime
10 POINTS
Completed an art project
XTRA CREDIT
Completed reading a book
XTRA CREDIT
6,000-12,000 POINTS

TEAM WARRIORS

CARD VIEW | LIST VIEW

POINTS 120,600
Water Venom
School: Vista Del Valle
Joined: 11/18/11
This warrior has not yet a super hero
SUPER HERO
SW ID#: 3529

POINTS 107,030
phantom
Based out of CA
Joined: 07/21/11

SUPER HERO
SW ID#: 3195

POINTS 97,590
subzeroman
School: Vista Del Valle
Joined: 11/18/11

SUPER HERO
SW ID#: 3534

POINTS 96,310
SnakeEyes
Based out of IL
Joined: 06/17/13

SUPER HERO
SW ID#: 6774

POINTS 92,230
Future ness
School: Nevin
Joined: 01/05/12

SUPER HERO
SW ID#: 4312

POINTS 73,810
Akali
School: Rockdale
Joined: 12/06/11

SUPER HERO
SW ID#: 4123

www.shaktiwarriors.com/welcome.php

www.centerforsecur... www.islam-laws.co... www.upenn.edu/e... cdn.americanprogre... www.kas.de/wf/doc... www.civitas.org.uk/... www.youquran.com... https://www.politic...

VISIT THE S.T.E.A.M. ACADEMY

TAKE ME TO THE ACADEMY

S.H.A.K.T.I. WARRIOR ACADEMY

CHECK OUT THE SCHOOL CHALLENGE

YOUR MISSION | YOUR TRAINING | ABOUT CHAOS | MEET OTHER WARRIORS | ARCADE | WATCH VIDEOS

ENTER YOUR TRAINING

Welcome Back marutan! LOG OUT

Name: marutan
Rank: Recruit
Points: 0

DAILY TRAINING

October 2014

Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

EXTRA CREDIT

EDIT SUPER HERO

CREATE TEAM

EDIT PROFILE

LOGOUT

YOUR AVATAR
CLICK TO DESIGN YOUR HERO

STATUS REPORT

You are currently at the Recruit level with 0 points. Here is what you need to accomplish to move up to the rank of Sidekick

1ST YEAR ACADEMY

Your Training

WELCOME
marutan

TOTAL POINTS
0
RECRUIT

Your Points

0	0	0	0
DAILY TRAINING	ECHO BOARD	LIBRARY	RECRUITING POINTS

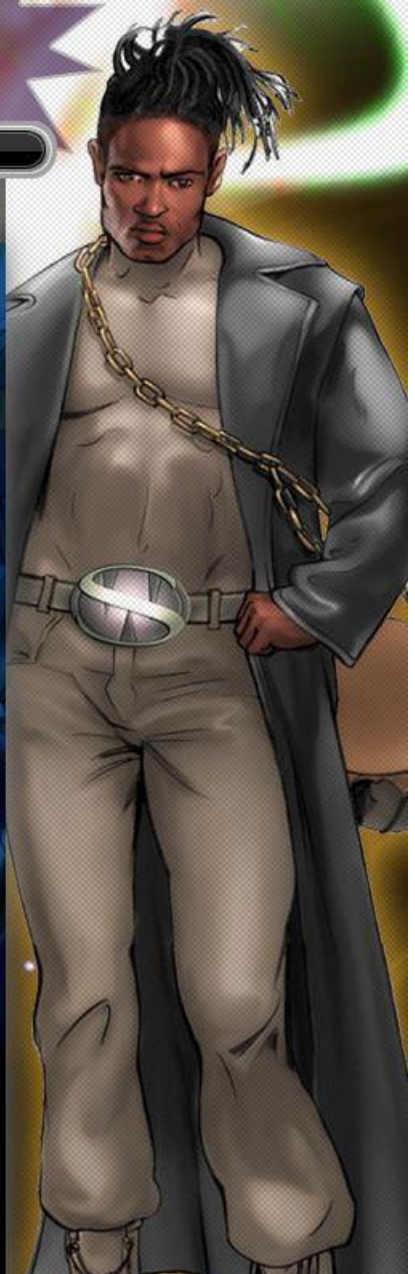
EARN POINTS

DAILY TRAINING
EARN POINTS

LIBRARY
EARN POINTS

ECHO BOARD
EARN POINTS

Your Teams



THE FATE OF THE WORLD

IS IN OUR HANDS