Virtual Worlds

Loosely based on "Designing Virtual Worlds" by Richard A. Bartle and other sources

Virtual Worlds

• Features
  - Rules
    • Underlying automation, e.g. Physics
  - Characters
    • Individuals populating the world
  - Real-time
    • Immediate feedback
  - Shared
    • Multiple individuals representing human users
  - Persistent
    • An instance has longer lifetime than a session

Birth of virtual worlds

PLATO
PLATO (U. Of Illinois 1961)

• Programmed Logic for Automatic Teaching Operations on CDC mainframes
  – US response to the apparent technological superiority of the USSR

PLATO

• 1960-61: 2 users at the same time
• 1963-69: 20 users at the same time, “anyone” could design new learning modules using TUTOR, bitmapped display, “applets”
• 1975: 150 locations connected

PLATO

• Communication Features
  – Provided through shared memory
  – Personal Notes (email)
  – Talkomatic (IRC/chat)
  – TermTalk (shared screen)
• Multiplayer Games
  – Flight Simulators ("Airfight" 1973 → MS Flight Sim)
  – Role-Playing Games ("Avatar" ~1975-79)
PLATO

- Influential but not direct impact
  - Fast network and superior graphics not available to most people!
  - A terminal cost about $12,000

Birth of widespread virtual worlds

MUD
Original MUD (Essex U. 1978)

- **Motivation** (for Roy Trubshaw)
  - Make single player games like ADVENT and ZORK (DUNGEN) multiplayer (thus Multi User Dungeon)
  - Interest in language parsers and interpreters

- **Development** (on DEC 10)
  - Engine: Written in MACRO-10 (1978), later in BCPL (fore-runner of C)
  - World: Written in MUDDL (Multi-User Dungeon Definition Language)

Original MUD

- **Networking**
  - New Packet Switching Service pilot program with BT: EPSS with contact to and from ARPA net.
  - Direct Dial-up (extra modems donated by enthusiastic users in the BBS community)
  - Maximum number of players in a single world: 36 (36 bit words, 1 bit used per player); New worlds were spawned for more players

AberMUD (U. of Wales 1988)

- **Development**
  - C code compiled on Unix! MUD (and various incarnations) spread throughout the world’s Universities.

- **See for example**: asylum-mud.org 6715
TinyMUD (CMU 1989)

• Main Feature
  – Users could create new locations and objects from within the world (of limited functionality).

• A Social Virtual VWorld
  – Deliberately intended to be different from hack-and-slash MUDs like AberMUD before it.
  – Practically no “game” aspect! Users made stuff and talked about it!
  – D for “Dimension” or “Domain”, not “Dungeon”

LPMUD (U. Of Gothenburg 1989)

• Motivation
  – Mix adventure of AberMUD and user-extensibility of TinyMUD

• Main Feature
  – In-Game scripting language: LPC
  – Users could create powerful objects and functionality while game was running!

LambdaMOO (Xerox PARC 1990)

• Motivation
  – Place for play, conferencing and collaboration

• Main Feature
  – “MUD Object Oriented” through the MOO Programming Language (byte-code compiled, dynamically typed, prototype object oriented)
  – Attracted journalists, academics and “social misfits” – still an active community!

• See: lambda.moo.mud.org 8888
MediaMOO (MIT 1993)

- Motivation
  - Previous MUDs/MOOs a random collection of people with little in common: Least common denominator of discourse.
  - Create a professional community of Media researchers with known names and email addresses.
  - “Like an endless reception for a conference on media studies” [Amy Bruckman]

MOOSE Crossing (MIT 1995)

- Motivation
  - Teach children 8 to 13 to program
  - A constructionist learning environment
  - Community and construction support learning
- Major Feature
  - MOOSE programming language designed for children

The graphical MMORPG evolution
MERIDIAN 59 to WOW
Meridian 59 (3DO 1996)

- Goal to become the first 3D MUD (based on Scepter of Goth).
- First "first-person perspective" virtual world since Avatar.
- Bad business decisions, and somewhat premature technology led to limited acceptance.

Ultima Online (OSI 1997)

- Design lead by Raph Koster with MUD background.
- Emphasized role-playing and community.
- Attracted 100,000 subscribers in 1st year!
- Victim of its success: Too many customers.

EverQuest (989 Studios 1999)

- Built on DikuMUD (1990), which itself was a rewrite of AberMUD.
- Quickly reached critical mass of players (surpassed Ultima Online within 6 months).
- Became the de-facto MMORPG interface.
- Endlessly cloned...
World of Warcraft (Blizzard 2004)

The graphical social evolution

HABITAT to 2ND LIFE

HABITAT (Lucasfilm Games 1986)

- Pilot project on Quantum Link (later AOL) for Commodore 64.
- Supported thousands of users in a shared graphical world.
- Users had their own apartments, could go shopping, run businesses and participate in little stories (like plays).
- A grand experiment in virtual community building with well documented lessons.
HABITAT

• Essential lesson: Cyberspace is defined more by interactions among users than by implementation technology.

• The characteristics of the other people and the ways they can affect one another is key.

• Consisted of around 20,000 regions [screens] and hundreds of interactive object types like Books, Vending machines, Drugs and Teleports.

HABITAT

• People seek richness, complexity and depth which can only be provided by other people

  ➔ Focus on augmenting communication and interaction.

HABITAT

• Behavior can be compactly represented abstractly to save bandwidth

  ➔ Adopt an object-oriented approach: Objects in the world correspond to user’s conceptual model. Describe world in terms of what is there and what you can do with it, rather than what it looks like.

  ➔ Platform is relatively unimportant.
HABITAT

- Detailed central planning is impossible
  
  - Centrally planning an entertaining world for 20,000 people simply too big of a task.
  
  - No fixed sets of objectives, but a palette of possible activities, some of them structured (treasure hunts), some propelled by user motivations (businessness), some free form (parties).
  
  - Observe and assist.

HABITAT

- Help with self-regulation and work within the world itself.
  
  - Support groups, orders and guilds that can structure their activities and the society around them.
  
  - Be aware of the endless debate on crime and punishment.

Worlds Chat (1995)
Second Life

• “Second Life residents get virtual meeting rooms: Crowne Plaza brings business meetings to the popular online three-dimensional world”
  
  Times Online, July 4, 2007

• “Art makes a scene on Second Life: The online virtual world is becoming one of the best places for artists, curators and dealers to meet”
  
  The Art Newspaper, July 4, 2007

• Teaching methods enter modern age: Almost 300 universities now host classes in the 3-D virtual world of Second Life”
  
  The Mercury News, July 5, 2007
Attend Virtual University...
...party...

...or just hang out...

...and shop
Virtual Property

Some Further Reading

• “PLATO: The Emergence of Online Community” by David R. Woolley:
  http://thinkofit.com/plato/dwplato.htm

• Raph Koster's Online World Timeline:
  http://www.raphkoster.com/gaming/multimline.shtml

• “The Lessons of Lucasfilm's Habitat” by Chip Morningstar and F. Randall Farmer:
  http://www.fudco.com/chip/lessons.html