
Introduction to Gaming

Guest Lecture:
Roger Smith, Ph.D.
Chief Technology Officer
US Army Simulation, Training & Instrumentation
<http://www.peostri.army.mil/CTO>

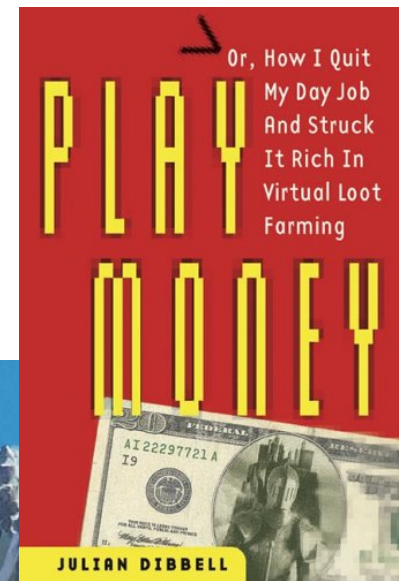
M&S for Systems Engineering

Why are we talking about games?

“Play is to the 21st century what steam was to the 19th century” - Power that can be harnessed for social and economic benefits.



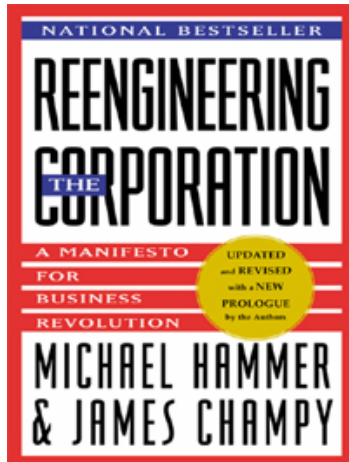
Julian Dibbell,
Play Money



The Enabling Role of New Technology

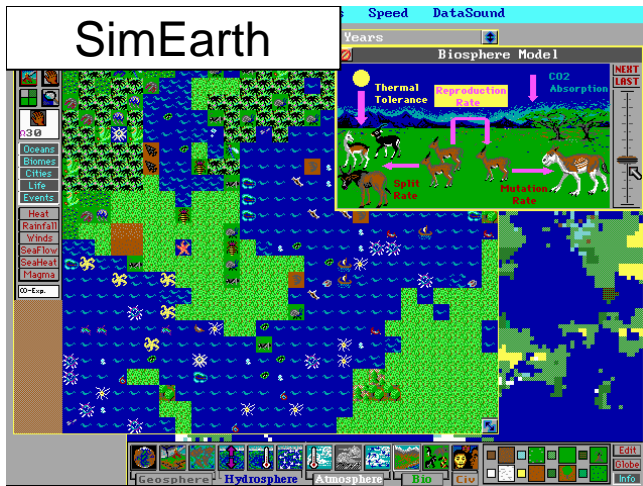


“The power of the Xerox copier did not lie in its capability to replace carbon paper and other existing copying technologies, but in its ability to perform services beyond the reach of these technologies. The 914 [copier] created a market for convenience copies that had previously not existed.”



(Hammer & Champy, 1993)

This is the power of game technologies. They create or enable a new need and then satisfy it.

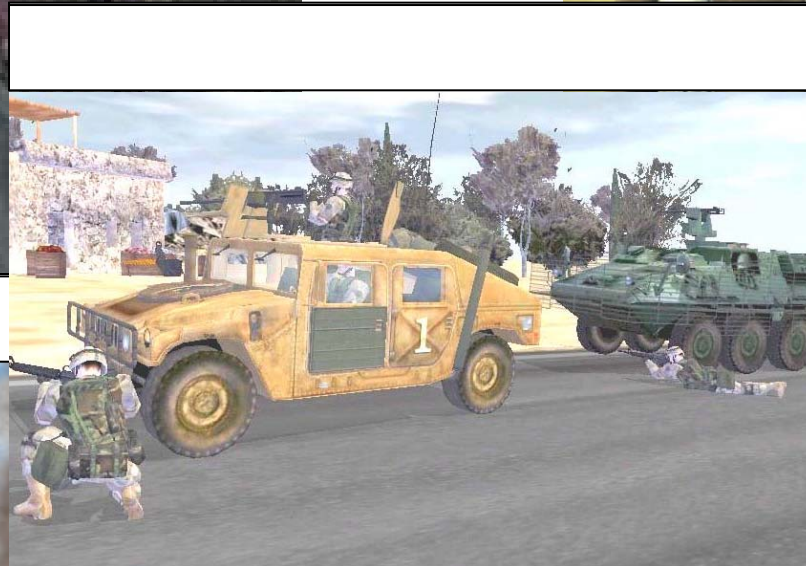


Your Games

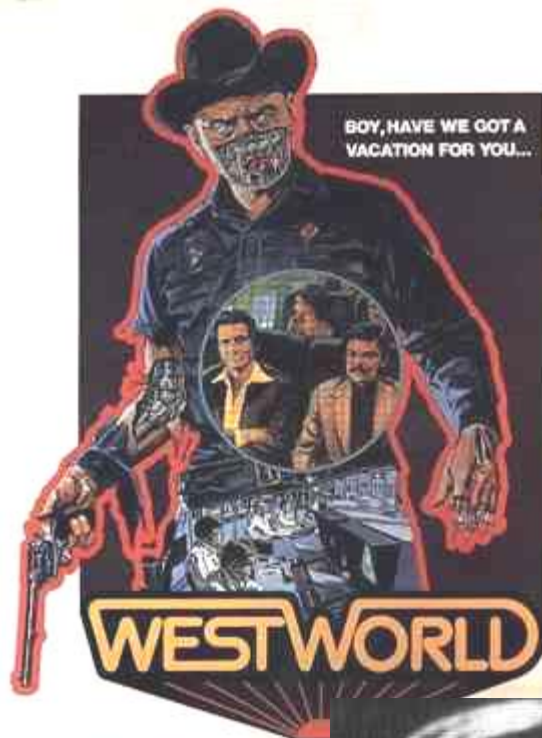
- What games do you play or have you played?



What are these games?



Robot Analogy: Movie Robots

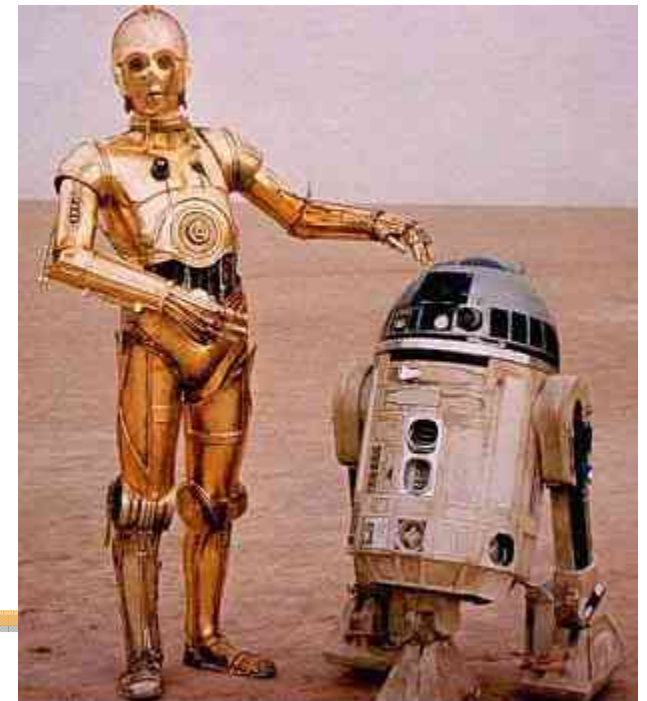


...Where nothing can p

Special Feature
"WESTWORLD" YUL BRYNNE
JAMES BROLIN -
PRODUCED BY MICHAEL
PARANOVICH



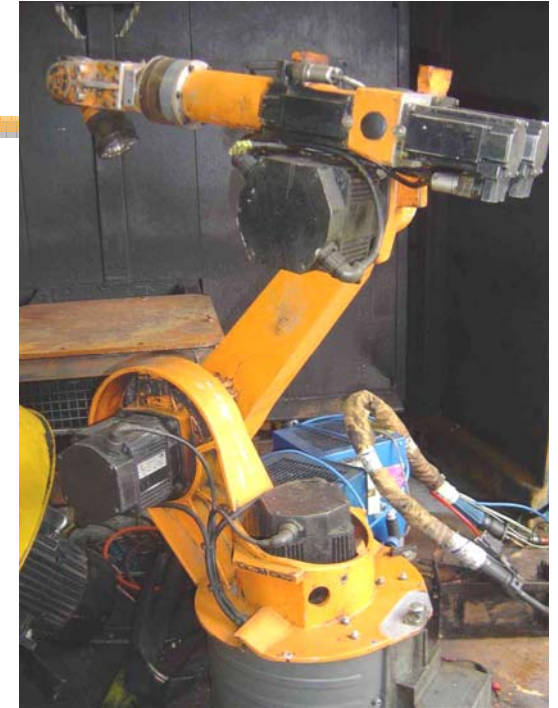
FROM HAMMACHER SCHLENNER



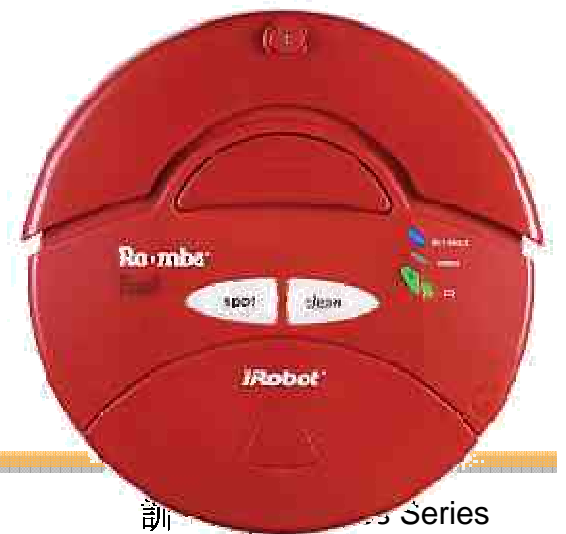
Industrial Robots



12.27.1999

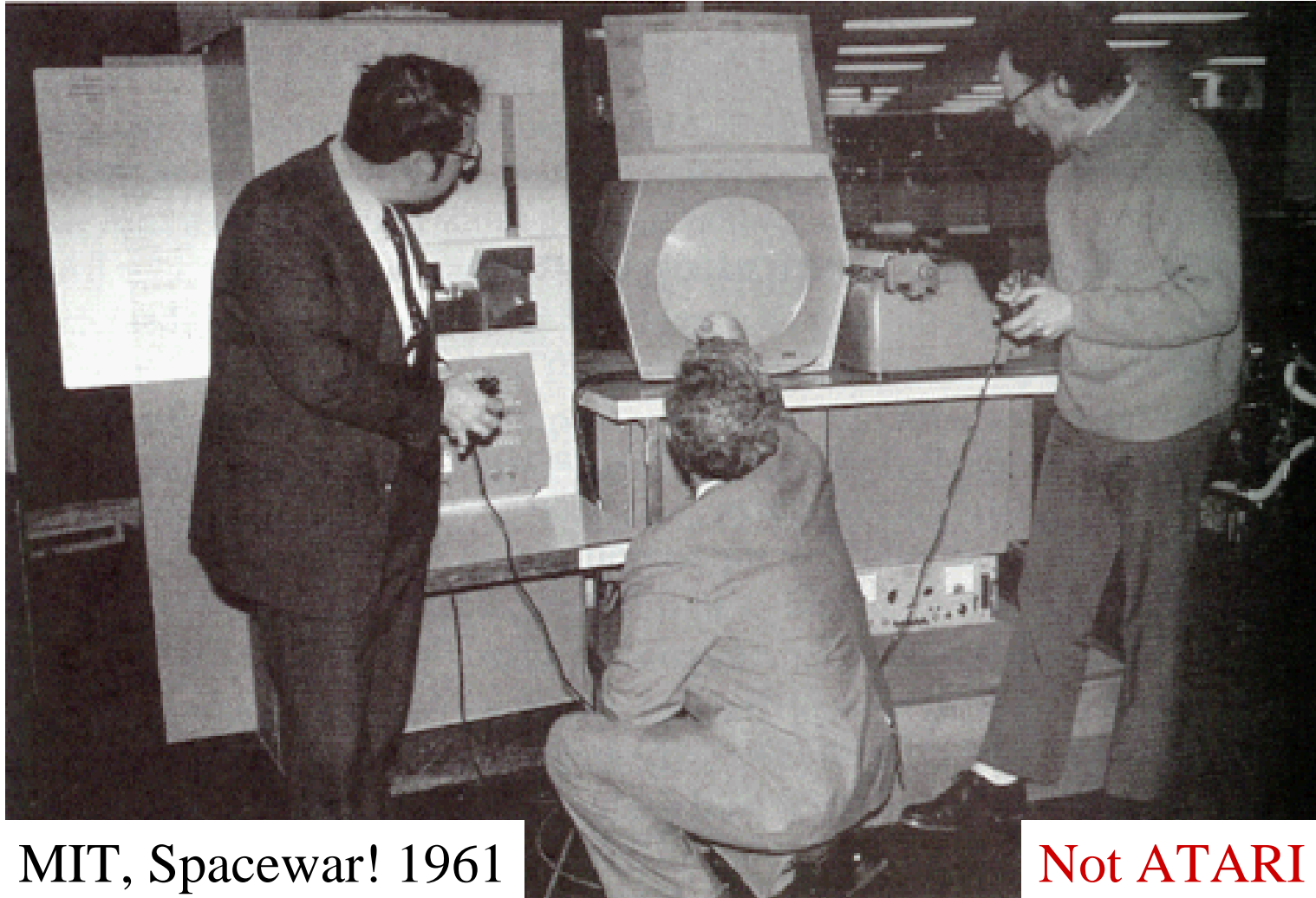


Ge



Roomba Series

First Interactive Computer Game



MIT, Spacewar! 1961

Not ATARI

1970 Serious Games Definition

“Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context. A more conventional definition would say that a game is a context with rules among adversaries trying to win objectives.

“We are concerned with serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement.”

Abt, C. (1970). *Serious Games*. New York: The Viking Press.



2005 Serious Games Definition

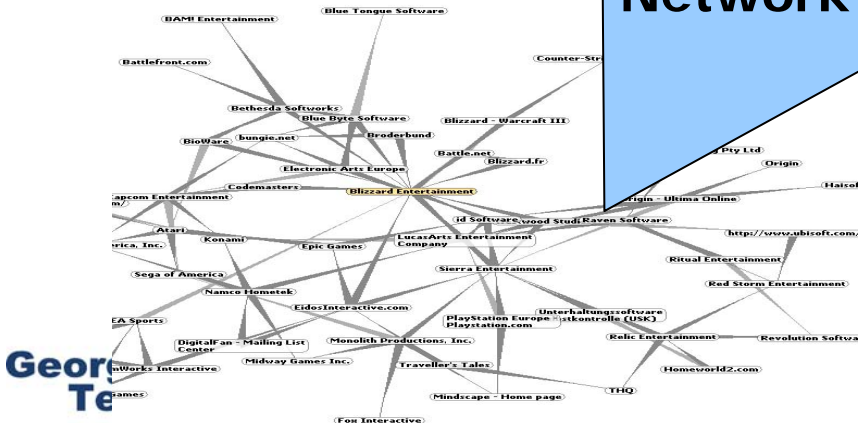
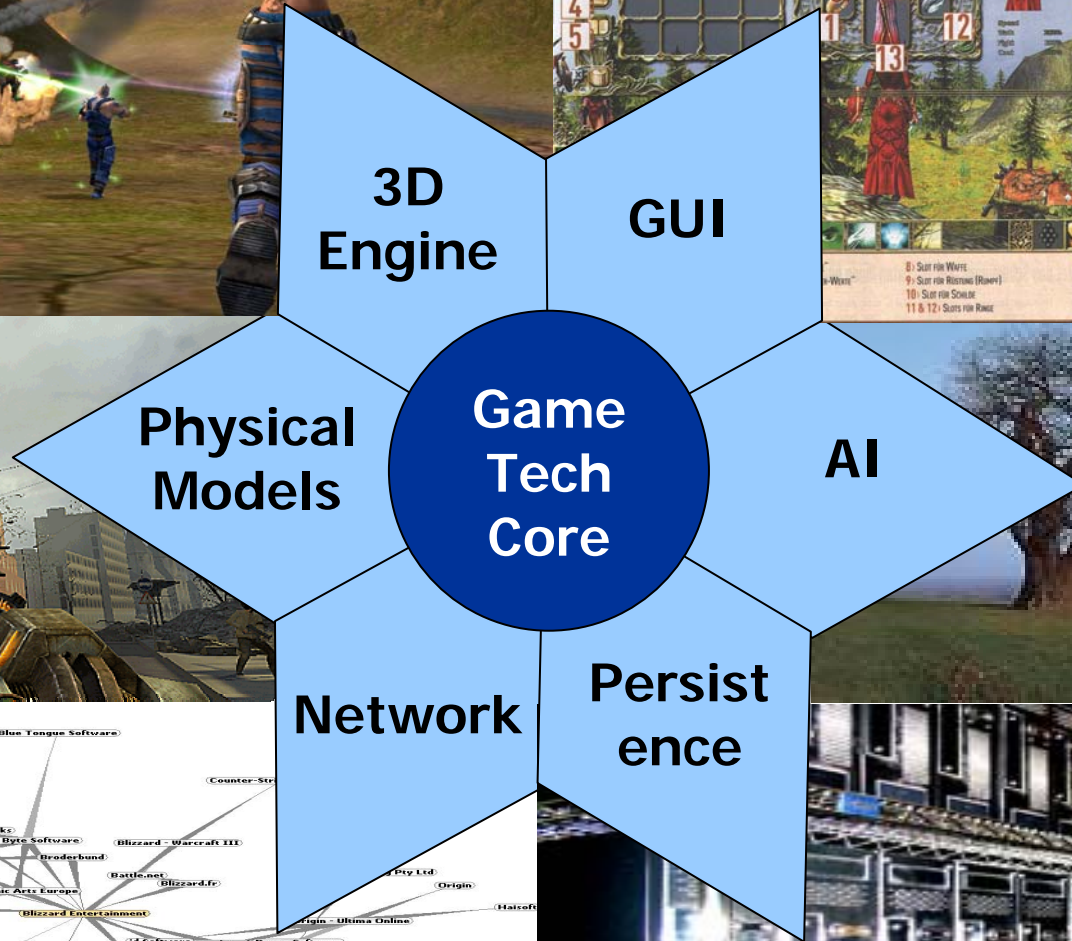
Game: “a physical or mental contest, played according to specific rules, with the goal of amusing or rewarding the participant.”

Video Game: “a mental contest, played with a computer according to certain rules for amusement, recreation, or winning a stake.”

Serious Game: “a mental contest, played with a computer in accordance with specific rules that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives.”

Zyda, M. (September 2005). “From visual simulation to virtual reality to games”. *IEEE Computer*.

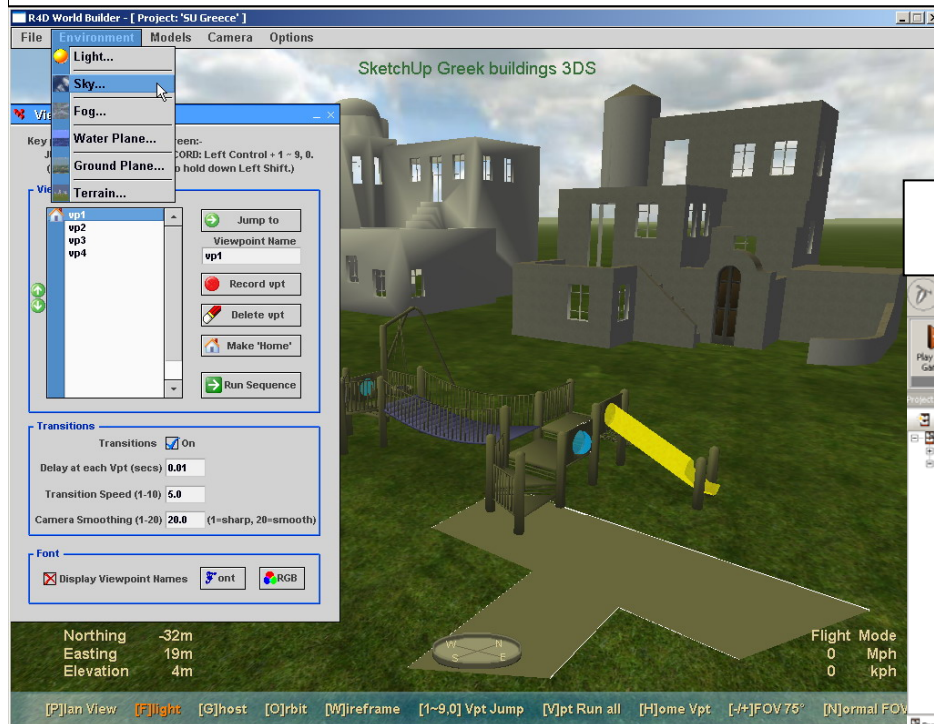




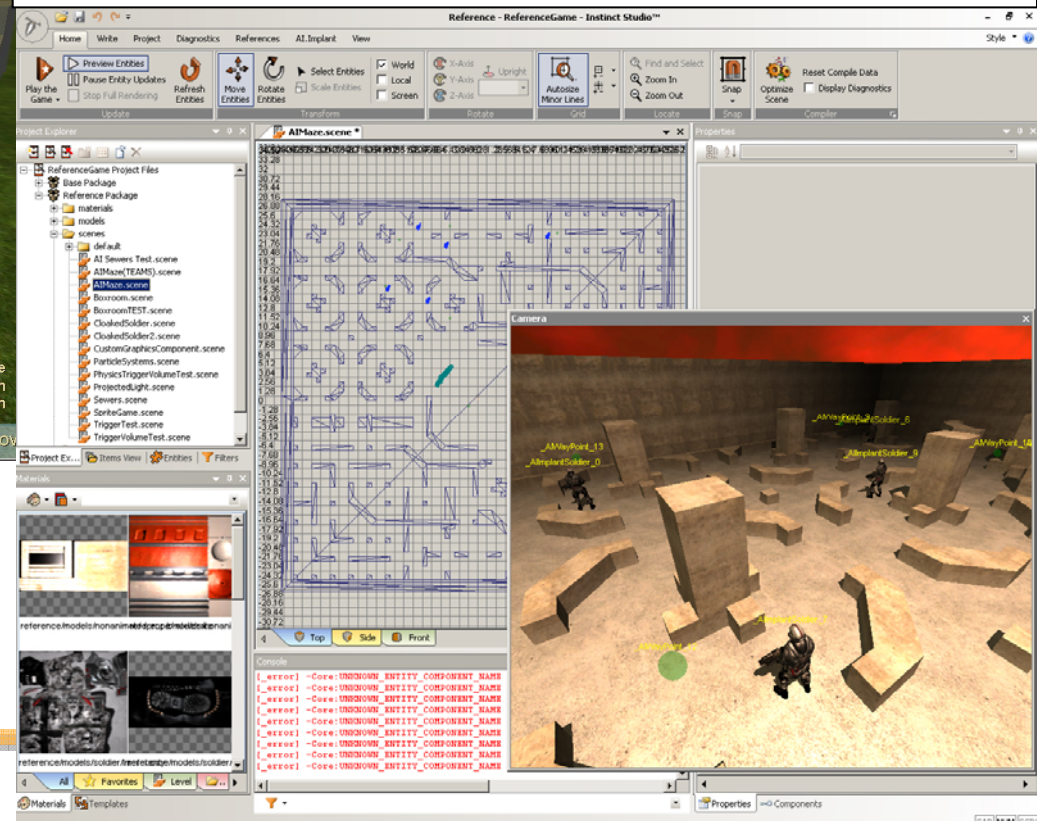
Georg
Te

Pre-Game Technologies

World Building Tools

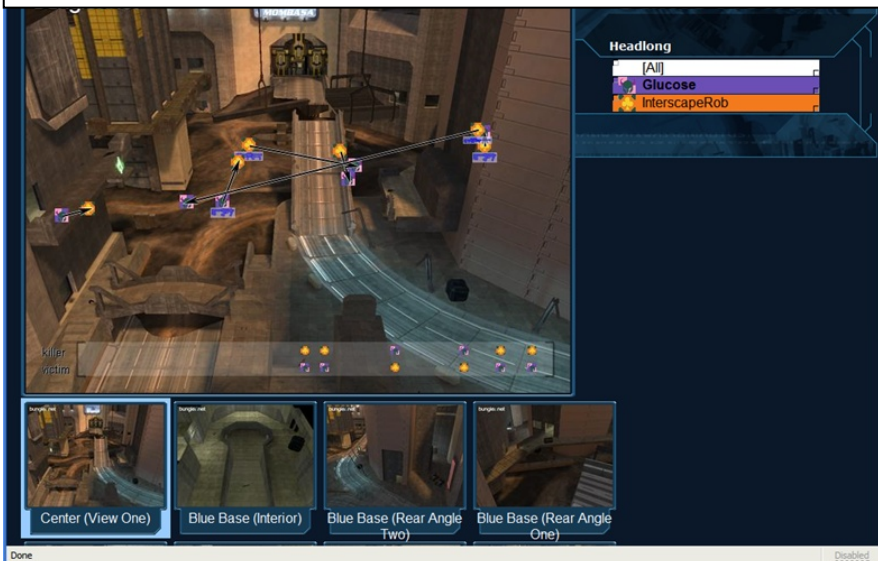


Behavior Scripting



Post-Game Technologies

Game Recording



AAR

Player & Team Stats

Philadelphia Phillies									
6	Balls	Batting C. Williams (0-1)							
2	Strikes	Pitching F. Fitzsimmons (3.0 IP, 0 ER, 0 BB, 0 K)							
3	Outs	HR: None							
New York Giants Quick Box Scores									
#	Player	AB	R	H	HR	BB	K	AVG	OPS
1	L.M. Ott, RF	1	0	0	0	0	0	0.000	0.000
2	R.F. Lindstrom, 3B	1	0	1	0	0	0	1.000	2.000
3	R.R. Hornsby, 2B	1	0	0	0	0	0	0.000	0.000
4	L.G. Marger, LF	1	0	0	0	0	0	0.000	0.000
5	L.B. Terry, 1B	0	0	0	0	0	0	0.000	0.000
6	R.T. Jackson, SS	0	0	0	0	0	0	0.000	0.000
7	R.J. Cummings, C	0	0	0	0	0	0	0.000	0.000
8	H. Mueller, CF	0	0	0	0	0	0	0.000	0.000
9	R.F. Fitzsimmons, P	0	0	0	0	0	0	0.000	0.000
Philadelphia Phillies Quick Box Scores									
#	Player	AB	R	H	HR	BB	K	AVG	OPS
1	R.F. Thompson, 2B	1	0	1	0	0	0	1.000	2.000
2	R.J. Moken, LF	1	0	0	0	0	0	0.000	0.000
3	L.F. Leach, CF	1	0	0	0	0	0	0.000	0.000
4	L.C. Williams, RF	0	0	0	0	0	0	0.000	0.000
5	L.R. Wrightstone, 3	0	0	0	0	0	0	0.000	0.000
6	R.S. McInnis, 1B	0	0	0	0	0	0	0.000	0.000
7	R.B. Dedrick, SS	0	0	0	0	0	0	0.000	0.000
8	N.I. Wilson, C	0	0	0	0	0	0	0.000	0.000
9	L.J. Scott, P	0	0	0	0	0	0	0.000	0.000
Pitching: RHP Freddie Fat Freddie Fitzsimmons									
Stats	W	L	S	IP	H	HR	BB	K	ERA
Career	20	13	0	294.1	295	11	76	81	2.82
Season	0	0	0	0.2	1	0	0	0	0.00
Home	0	0	0	0.2	1	0	0	0	0.00
Away	0	0	0	0.2	1	0	0	0	0.00
April	0	0	0	0.2	1	0	0	0	0.00
Today	0	0	0	0.2	1	0	0	0	0.00
Opp. Batting	AB	R	H	HR	BB	K	AVG	OPS	SLG
Career vs.	1	0	0	0	0	0	0.000	0.000	0.000
Season vs.	1	0	0	0	0	0	0.000	0.000	0.000
Runner on 1st	2	0	0	0	0	0	0.000	0.000	0.000
Twining 1-9	3	0	1	0	0	0	0.333	0.333	0.333
Ahead in Count	2	0	1	0	0	0	0.500	0.500	0.500
Pitching: LHB Cy Williams									
Stats	W	L	S	IP	H	HR	BB	K	ERA
Career	1948	1758	204	847	549	618	295	343	4.67
Season	0	0	0	0	0	0	0	0	0.00
Home	0	0	0	0	0	0	0	0	0.00
Away	0	0	0	0	0	0	0	0	0.00
April	0	0	0	0	0	0	0	0	0.00
Today	0	0	0	0	0	0	0	0	0.00
Opp. Batting	AB	R	H	HR	BB	K	AVG	OPS	SLG
Career vs.	0	0	0	0	0	0	0.000	0.000	0.000
Season vs.	0	0	0	0	0	0	0.000	0.000	0.000
Runner on 1st	0	0	0	0	0	0	0.000	0.000	0.000
Twining 1-9	0	0	0	0	0	0	0.000	0.000	0.000
Behind in Count	0	0	0	0	0	0	0.000	0.000	0.000
Team Info									
New York					Philadelphia				
Available P/R	8				Available P/R	7			
Available Relievers	4				Available Relievers	4			
Rated Relievers	4				Rated Relievers	4			
Batting AVG	0.000				Batting AVG	0.000			
Runs Scored	0				Runs Scored	0			
Home Runs	0				Home Runs	0			
Team ERA	0.000				Team ERA	0.000			
Fullgame ERA	0.000				Fullgame ERA	0.000			
Team Range	0.000				Team Range	0.000			
Play-by-Play									
HR any key or click mouse to continue.									
Hard hit ground ball... to the left side... Jackson with a nice pickup... hard throw to first... and that takes care of Williams for the third out. That's three down... No runs, one hit, no errors. A corner left on.									



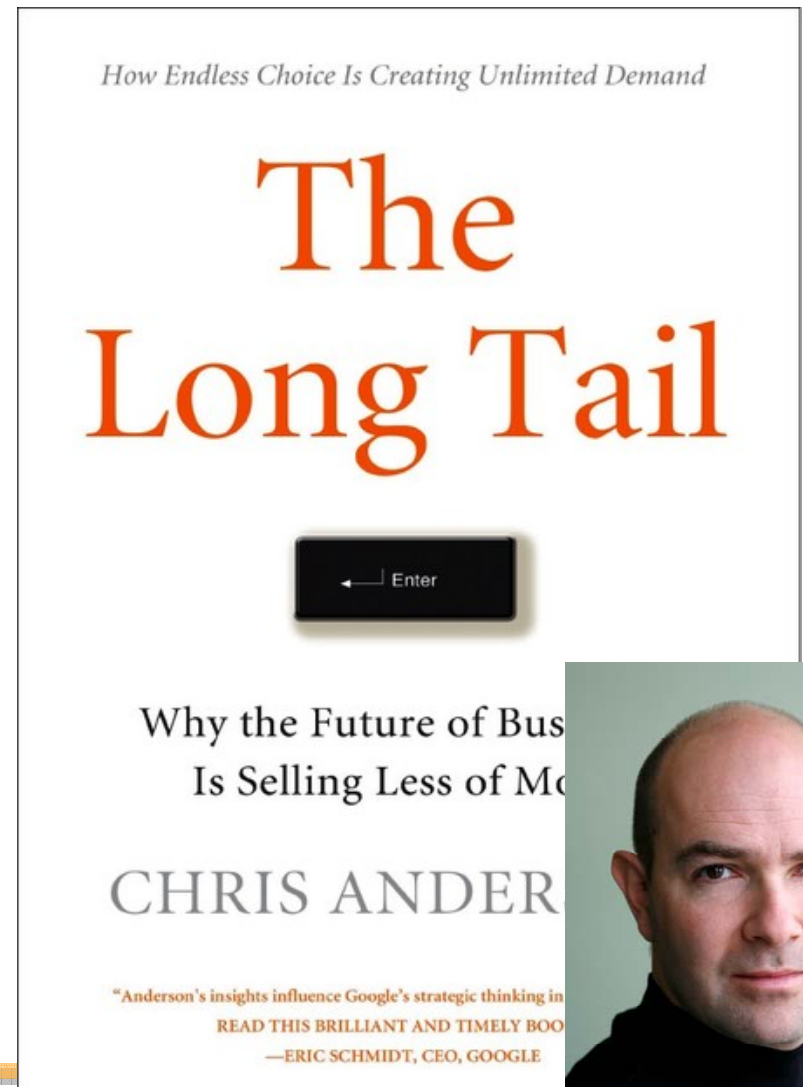
The Long Tail

Local Markets

- Physical products, delivery, and stocking
- Requires concentration into the “Top 100” products.

Global Markets

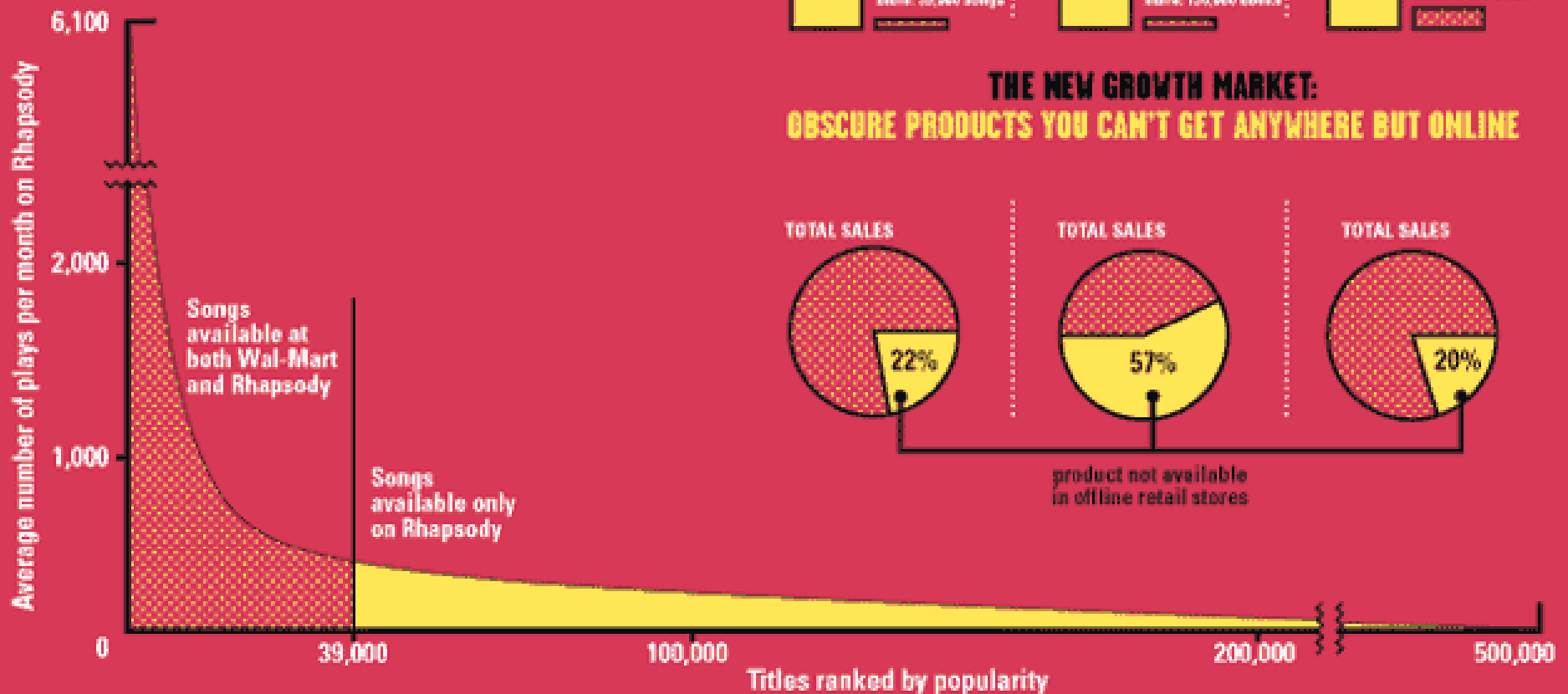
- Digital products, instant delivery, and free stocking
- Allows diversification into the “Top 100,000” products.



The Long Tail of Digital Music

ANATOMY OF THE LONG TAIL

Online services carry far more inventory than traditional retailers. Rhapsody, for example, offers 19 times as many songs as Wal-Mart's stock of 39,000 tunes. The appetite for Rhapsody's more obscure tunes (charted below in yellow) makes up the so-called Long Tail. Meanwhile, even as consumers flock to mainstream books, music, and films (right), there is real demand for niche fare found only online.



Simulation's Long Tail

Trigger Pullers
Combat Missions
Life Threatening

\$50M project



Medical
Logistics
Intelligence

\$1M project



Signal/IT
Linguist
Interrogation

\$100K project



Ethics
Culture
Engine Repair

\$10K project

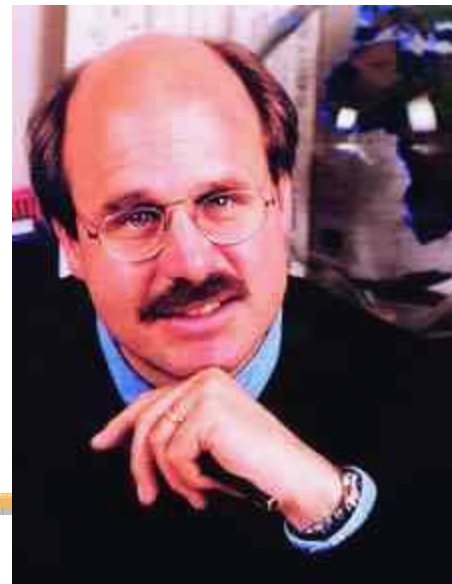


How Close is the Military Gaming Future?

“Silicon Valley is littered with the corpses of companies who mistook a clear view for a short distance.

“One of the secrets in my business is that everything changes slower than people imagine. Change only seems fast because people overlook the antecedents. Most ideas take 20 years to become overnight successes.”

Paul Saffo. (July 16, 2007). “The Future Really is Now”. *ComputerWorld*.



References

- Abt, C. (1970). *Serious Games*. New York: The Viking Press.
- Anderson, C. (2006). *The Long Tail: Why the future of business is selling less of more*. Hyperion Books.
- Bergeron, B. (2006). *Developing serious games*. Boston, MA: Charles River Media.
- Casti, J. (1997). *Would-be Worlds: How simulation is changing the frontiers of science*. New York: John Wiley & Sons.
- Christensen, C. (1997). *The Innovator's dilemma: When new technologies cause great firms to fail*. Boston, MA: Harvard Business School Press.
- Julian Dibbell. (2006). *Play Money: or how I quit my day job and struck it rich in virtual loot farming*. Basic Books.
- Hammer, M and Champy, D. (1993). *Reengineering the corporation*. HarperCollins.
- Herz, J. and Macedonia, M. (April 2002). "Computer games and the military: Two views". *Defense Horizons*, 11. <http://www.ndu.edu/inss/DefHor/DH11/DH11.htm>
- Lenoir, T. (2003). "Programming theatres of war: Gamemakers as soldiers". In Latham, R. *Bombs and Bandwidth: The emerging relationship between information technology and security*. New York: The New Press. http://www.stanford.edu/dept/HPST/TimLenoir/Publications/Lenoir_TheatresOfWar.pdf
- Michael, D and Chen, S. (2005). *Serious games: Games that educate, train, and inform*. Boston, MA: Thompson Publishing.
- National Research Council, "Defense Modeling, Simulation, and Analysis: Meeting the Challenge", Committee on Modeling and Simulation for Defense Transformation, National Research Council, National Academies Press, 2006, <http://www.nap.edu/catalog/11726.html>.
- Orbanes, P.E. (2004). *The Game makers: The Story of Parker Brothers*. Boston: Harvard Business School Press.
- Paul Saffo. (July 16, 2007). "The Future Really is Now". *ComputerWorld*.
- Smith, R. (January 2006). "Technology disruption in the simulation industry". *Journal of Defense Modeling and Simulation*, 3(1), pp. 3-10. <http://www.scs.org/pubs/jdms/vol3num1/JDMSvol3no1Smith3-10.pdf>
- Smith, R., "Game Impact Theory: The Five Forces That Are Driving the Adoption of Game Technologies within Multiple Established Industries", 2007. http://www.modelbenders.com/papers/RSmith_SimTecT07.pdf.
- Zyda, M. (September 2005). "From visual simulation to virtual reality to games". *IEEE Computer*.