

# Overview

- ▶ Opportunities
- ▶ Definition
- ▶ Why use a game
- ▶ Outline taxonomy

# The Serious Games Opportunity

- ▶ Apply 30-year pool of talent & technology to other problem spaces that can benefit from cutting-edge technologies & design practices proven in entertainment & key demographics.
- ▶ Potential creative ways to solve existing/new problems with agreed upon comparative advantages that games & technologies readily supply.
- ▶ Creation or re-creation of a new field of game development with revenues already in the millions.
- ▶ Changing the nature of eLearning and making it much more engaging, motivating and relevant.
- ▶ But not just about education and training.

# Serious Games Activity?

- ▶ Funding is increasing but market still not huge (~\$70m)
  - 30-60% is military depending on how you measure the market
- ▶ Market research suggests market globally could be worth €14billion by the end of 2009 (€500m for education and training alone by 2010)
- ▶ Field is diversifying and growing critical segments:
  - Education
  - Military
  - Corporate Training
  - Games for Health
  - Games for Science
  - Advergaming

# Searching for Definition of Serious Games - Problems

- ▶ Solving problems is what humans do
- ▶ Entertainment is a solved problem
- ▶ There are other problems...
  - Teaching People
  - Figuring out the Right Policies
  - Putting Robots on Mars, Venus and Mercury
  - Overthrowing Dictators
  - Responding to Threats
- ▶ Problem solving is a big business!

# Games are Solutions

- ▶ Play has been used since dawn of mankind
- ▶ Playing *is* problem solving
- ▶ At times we've even been very deliberate in what and why we play
  - Chess, Checkers, Go
  - The Olympics
  - War Games
  - Roleplaying
  - Simulations
  - Game Theory
- ▶ And now... computer games

# What are Serious Games?

**1. Serious Games are Solutions to Problems**

**2. Serious Games =**

“Any meaningful use of computerized game/game industry resources whose **chief** mission is not entertainment”

# What are Serious Games?

- ▶ Serious games are simply **solutions to problems** that utilize assets developed by the modern day computer and videogame industry
- ▶ The serious in serious games refers to the **purpose** and nothing else

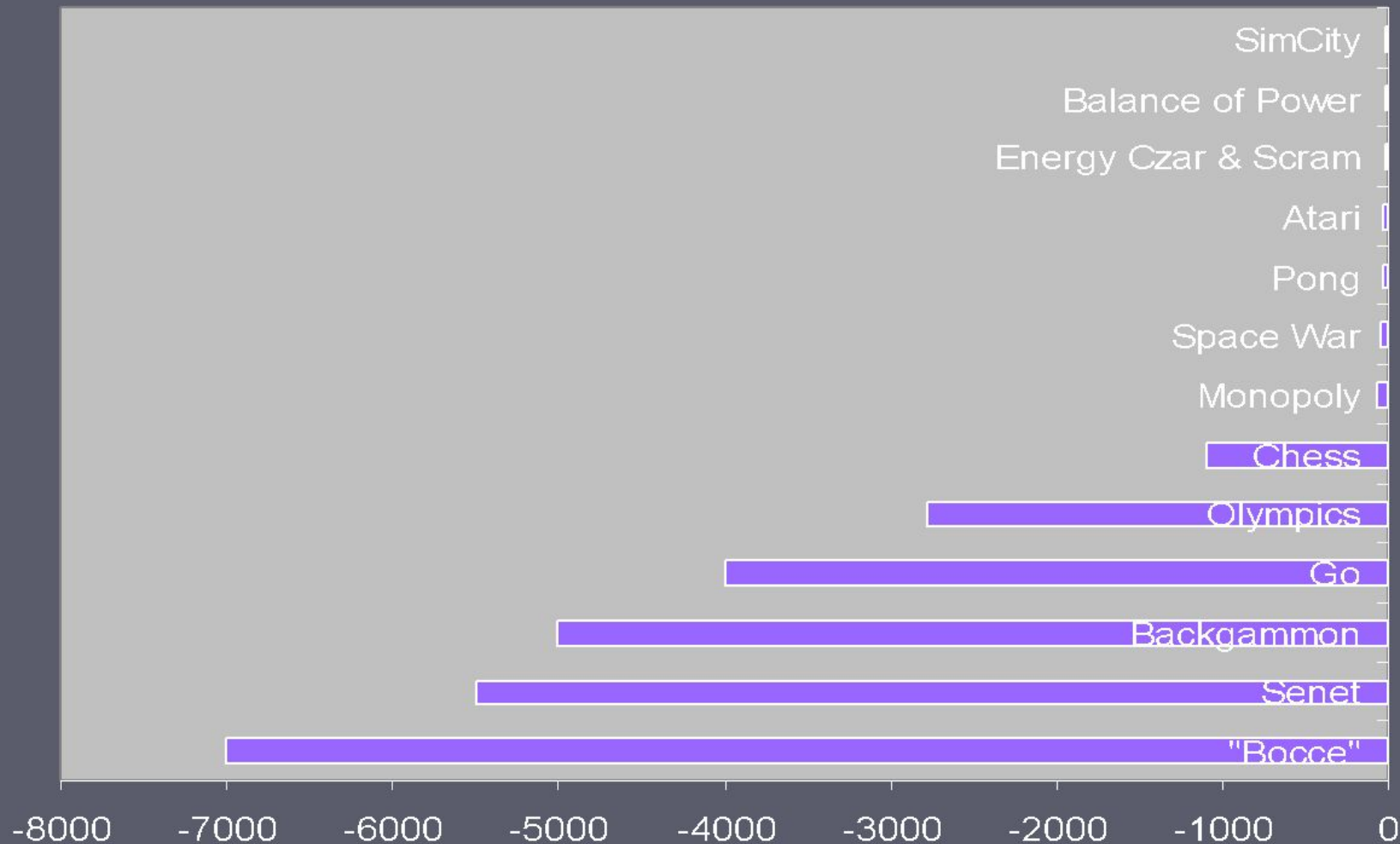
# Definition & Qualifications

- ▶ Must solve a problem other than entertainment
- ▶ Must tie to game development in at least one of three ways:
  - Application is a game
  - Application was in part or whole developed or designed by game developers precisely because of skills unique to their occupation
  - Application utilizes technology or development tools originally created for games
- ▶ COTS titles used in non-entertainment settings also qualify but...
  - Traditional drill & skill edutainment titles are something we'd prefer to leave behind and disassociate ourselves with.



# We're Just Starting

A History of Games



# What Can We Do With Games?

- ▶ Interface challenges & design
- ▶ Collective intelligence
- ▶ Data visualization
- ▶ Content production
- ▶ Communications
- ▶ Therapeutic tools
- ▶ Computer science
- ▶ Cultural Outreach

# Uncommon Examples of Serious Games

- ▶ Game developers redoing the interface for a vehicle
- ▶ Using consoles as low-cost video-conferencing devices
- ▶ Pain-distraction
- ▶ Lan-parties as team building exercises
- ▶ General purpose programming on GPU architectures
- ▶ Machinima (movie making in real-time game environments)
- ▶ As polling methodology by logging in-game choices of participants
- ▶ Economic research in online worlds
- ▶ Exergaming
- ▶ PTSD (Post Traumatic Stress Disorder) & ADD(Attention Deficit Hyperactivity Disorder) treatments
- ▶ Phobia treatments

# Why Use a Game?

- ▶ Games are growing media form
  - There is little doubt that people are increasingly allocating time from other media to games
- ▶ Games may offer better forms of educational experiences (at times)
  - Researchers are trying to evaluate this and early returns are promising
- ▶ The technologies & talents housed in the games industry have proven capabilities beyond games
  - Exploit technologies and techniques honed by millions if not billions of dollars

# Why Use a Game?

- ▶ Good games...
  - Map to how our brain actually works
    - ▶ Chunking, associative memory, patterns, multiple senses involved
  - Motivate us through a variety of media specific capabilities
    - ▶ Interactivity, flow, emotion, carrots/sticks, mastery, challenge, pacing
  - Provide us a “thoughtspace” a way to view and interact with information in an augmented fashion
    - ▶ Puts us at the centre, gives us control, increases views, manipulation
  - Abstracts things so we can understand them as systems vs. as disparate parts
  - Are themselves augmented by other resources
    - ▶ Player guides, p2p discussion, & more...

# Outline Taxonomy

- ▶ Games-based Learning
  - Use of CGs to education & training
- ▶ Advergames
  - Use of CGs to advertise a product, organization or viewpoint
- ▶ Games for Health
  - Use of CGs for medical training, games for health education, games for psychological therapy, or games for cognitive or physical rehabilitation
- ▶ Simulation Games
  - Mixture of skill, chance, and strategy to simulate an aspect of reality (eg. KM, flying, driving, stock exchange)