

# Serious Games beyond Training:

## From Process optimization to complex problem solving



# Agenda

- Dispelling Myths of Games today
- History of Serious Games @ IBM
- Process Optimization Games
- Next Gen City Sims
- High Impact Casual Games



The average gamer?



# Example: Achron

## Real-Time Strategy Game via timeline manipulation



[Watch](#) Gameplay & hear time travel explained

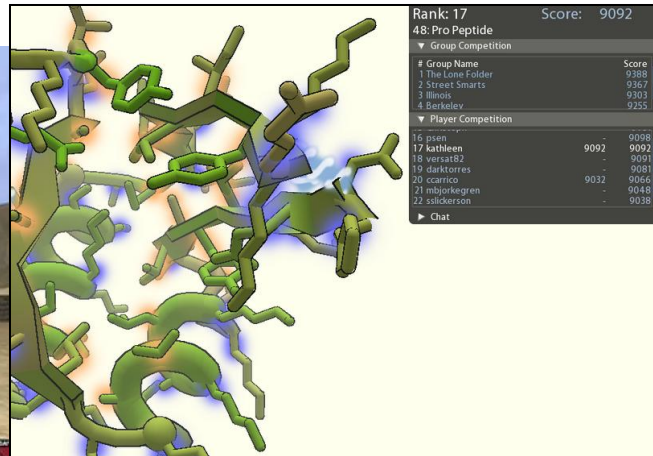




Although typically used to augment F2F training, a serious game can help solve real-world problems using an online and video game format



**America's Army**  
US Army  
Recruitment



**Foldit**  
Univ. Washington  
Protein recognition

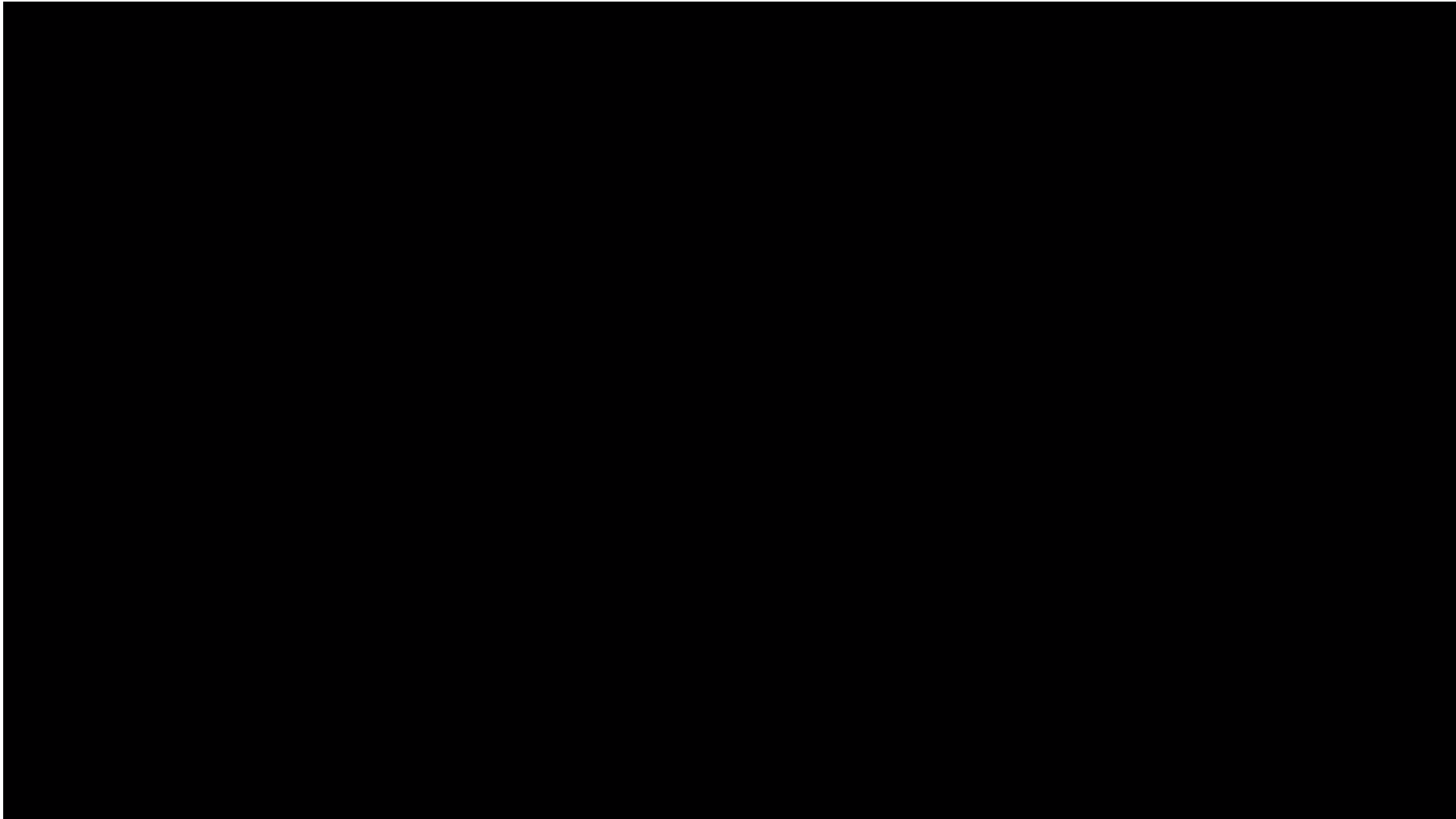


**EMS Training**  
Application

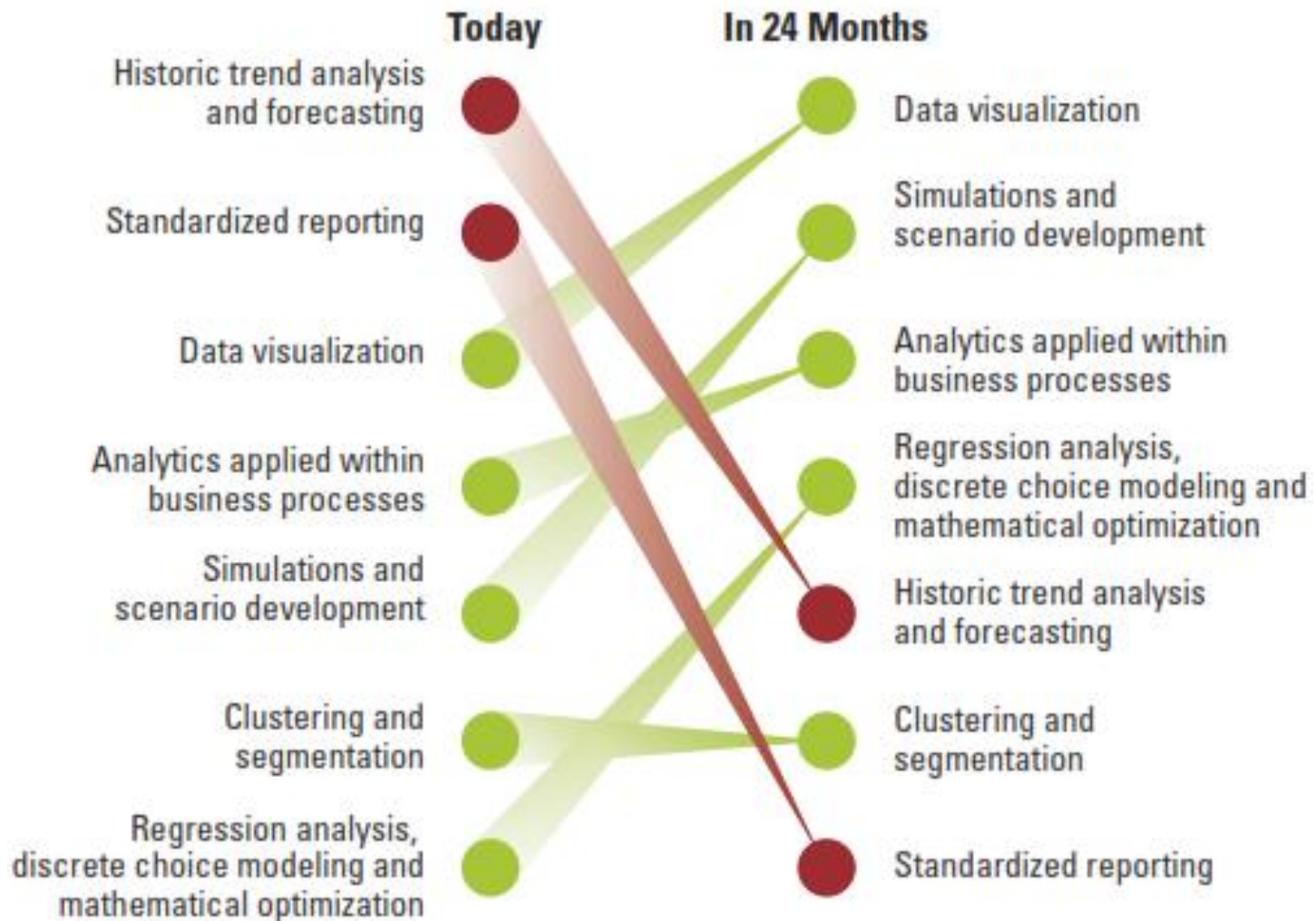
*Serious games enable the player to learn faster and retain more knowledge in order to make smarter decisions in real life situations by virtually experiencing the cause and effect of actions.*

*"Games are the most elevated form of investigation."*  
Albert Einstein

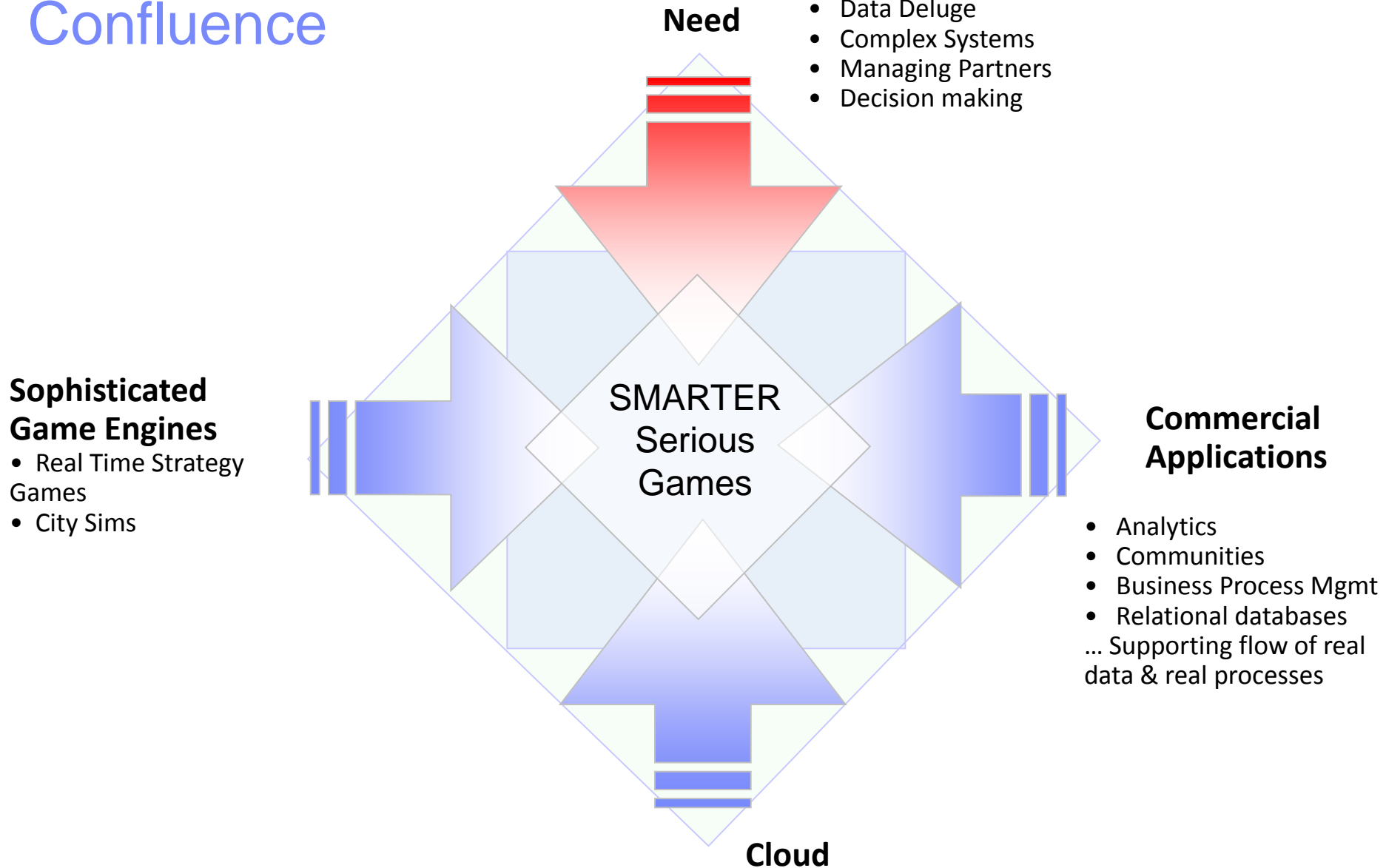




According to a recent study, using data visualization, simulations and scenario development will be the most valuable techniques to analyze all the data

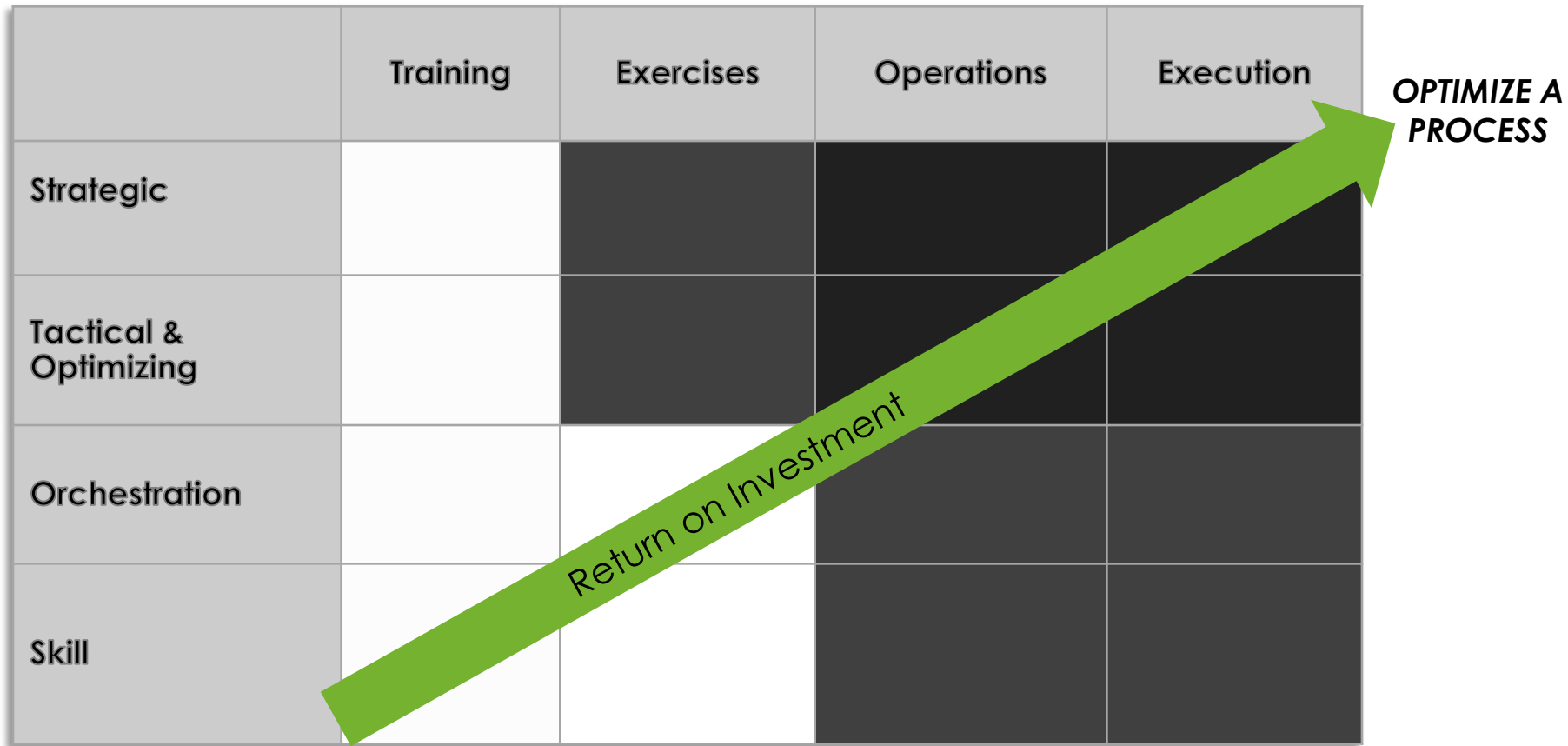


# Confluence



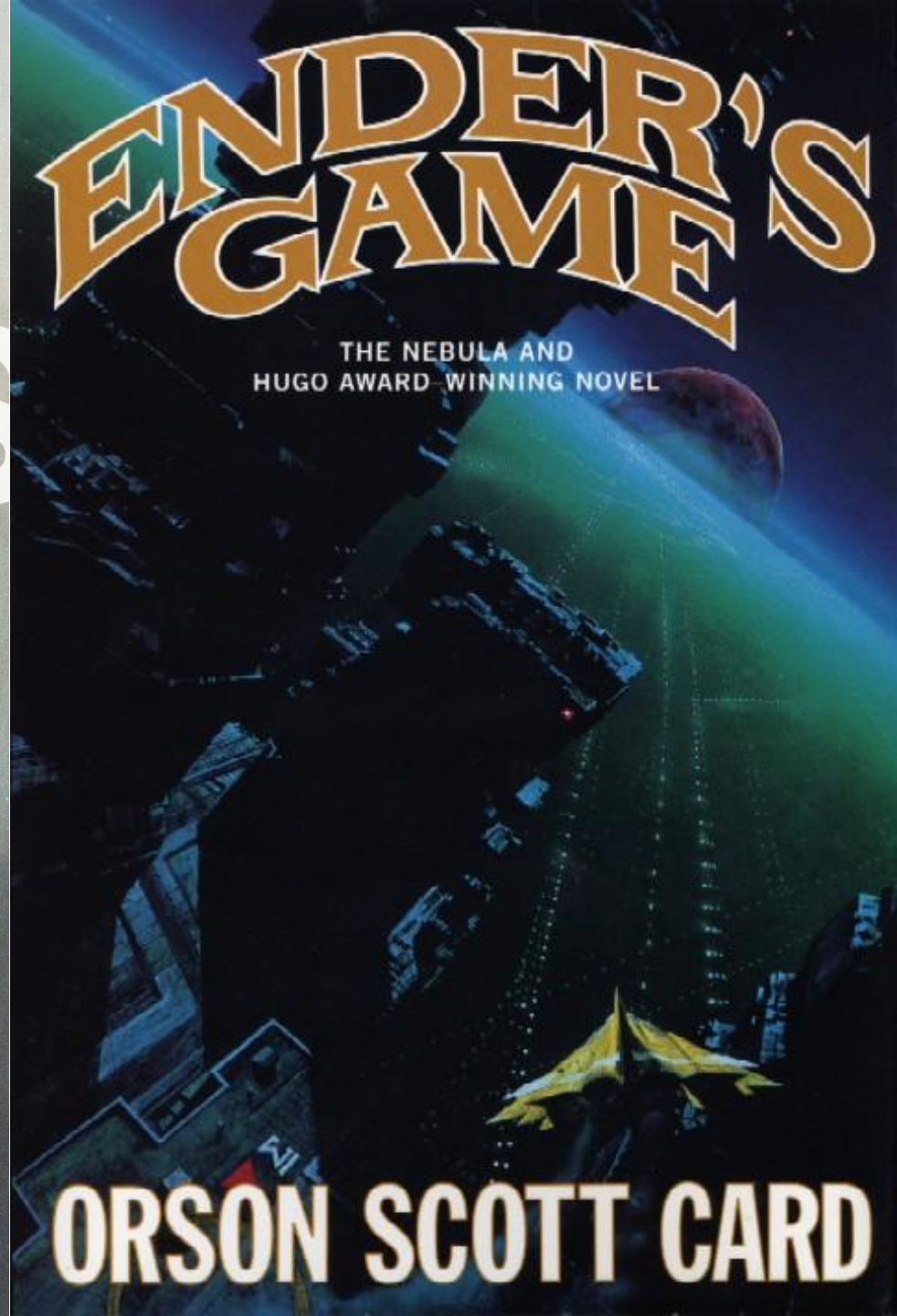
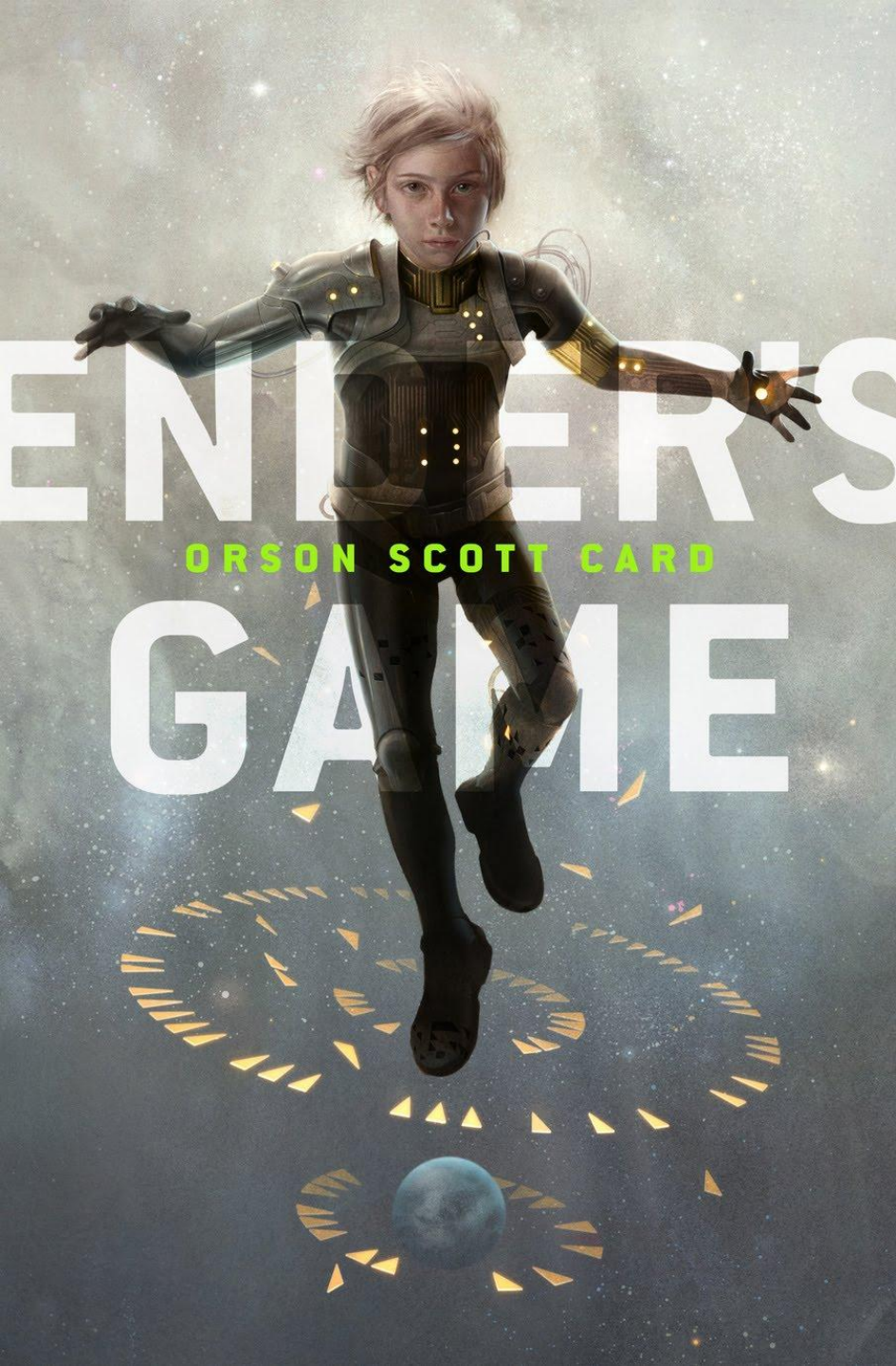


# ROI extends well beyond virtual training



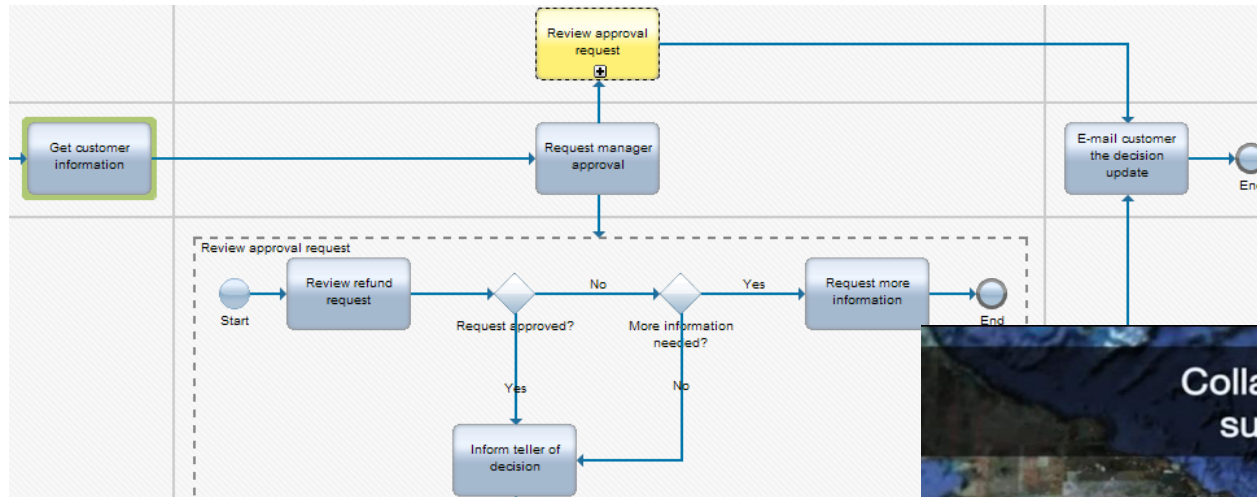
*Teach a Process/Instructional Design*







# Leaders can improve and vet business processes in a video game format.



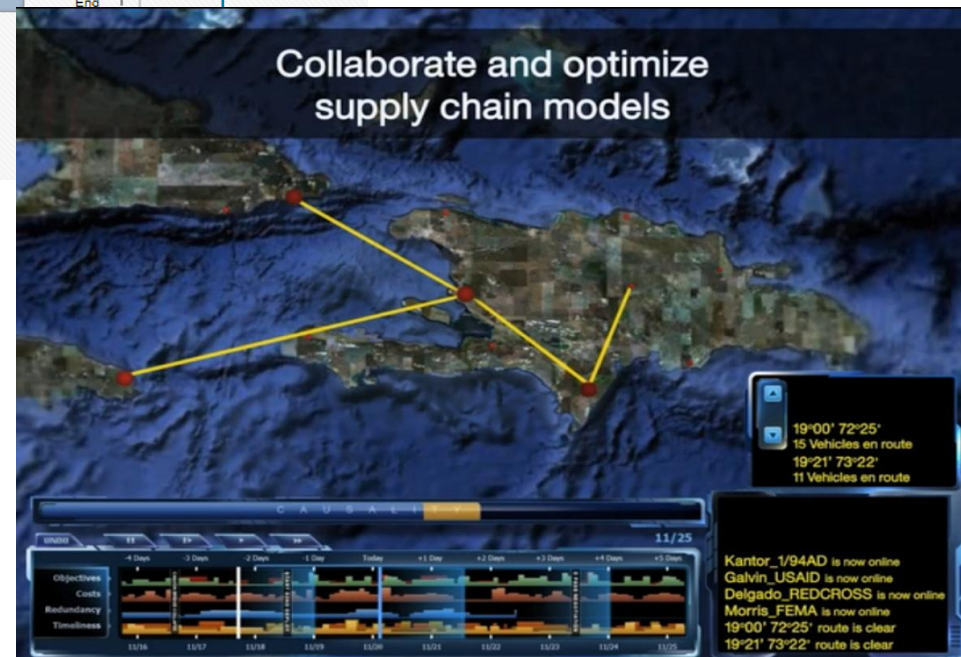
Hit Play Button to Begin



Transform this process flow...



...into this format.





“

By 2015:

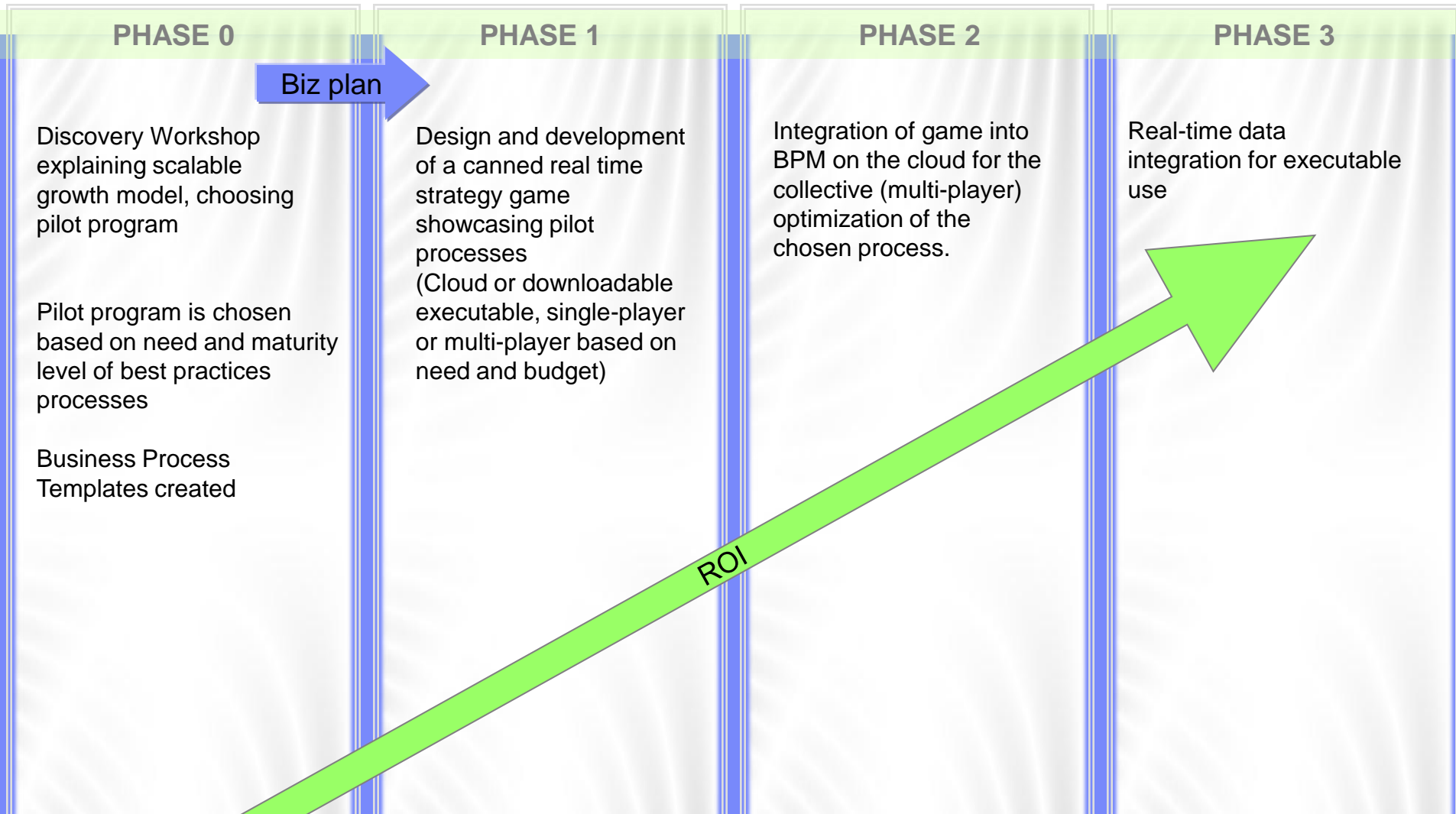
More Than **50 Percent** of  
Organizations That Manage  
Innovation Processes Will  
GAMIFY Those Processes

”

-- Gartner





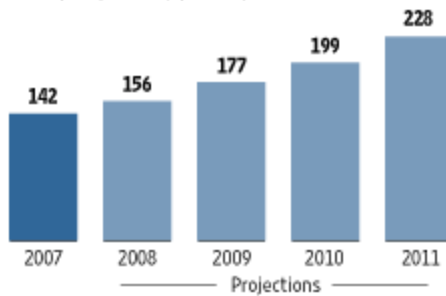


Start off creating a real time strategy game that can be used to train best practices associated with processes. Scale up as data matures to support strategic execution, real time visualization all in the SAME platform.

# Municipalities can enable a 'Smarter Conversation' about public policy with their citizenry

## Growing Inboxes

Average number of corporate emails sent and received per person, per day.



Note: Data are based on annual surveys.  
Source: Radicati Group

Transform the process of vetting public policy or training for disaster response...



...into this format.



'Serious Games can enable better bi-lateral conversations with customers'

---- Forrester

# Imagine, the Next Gen City Sim Game...

Citizenry/ General  
Public Awareness

Game Designers

Educators

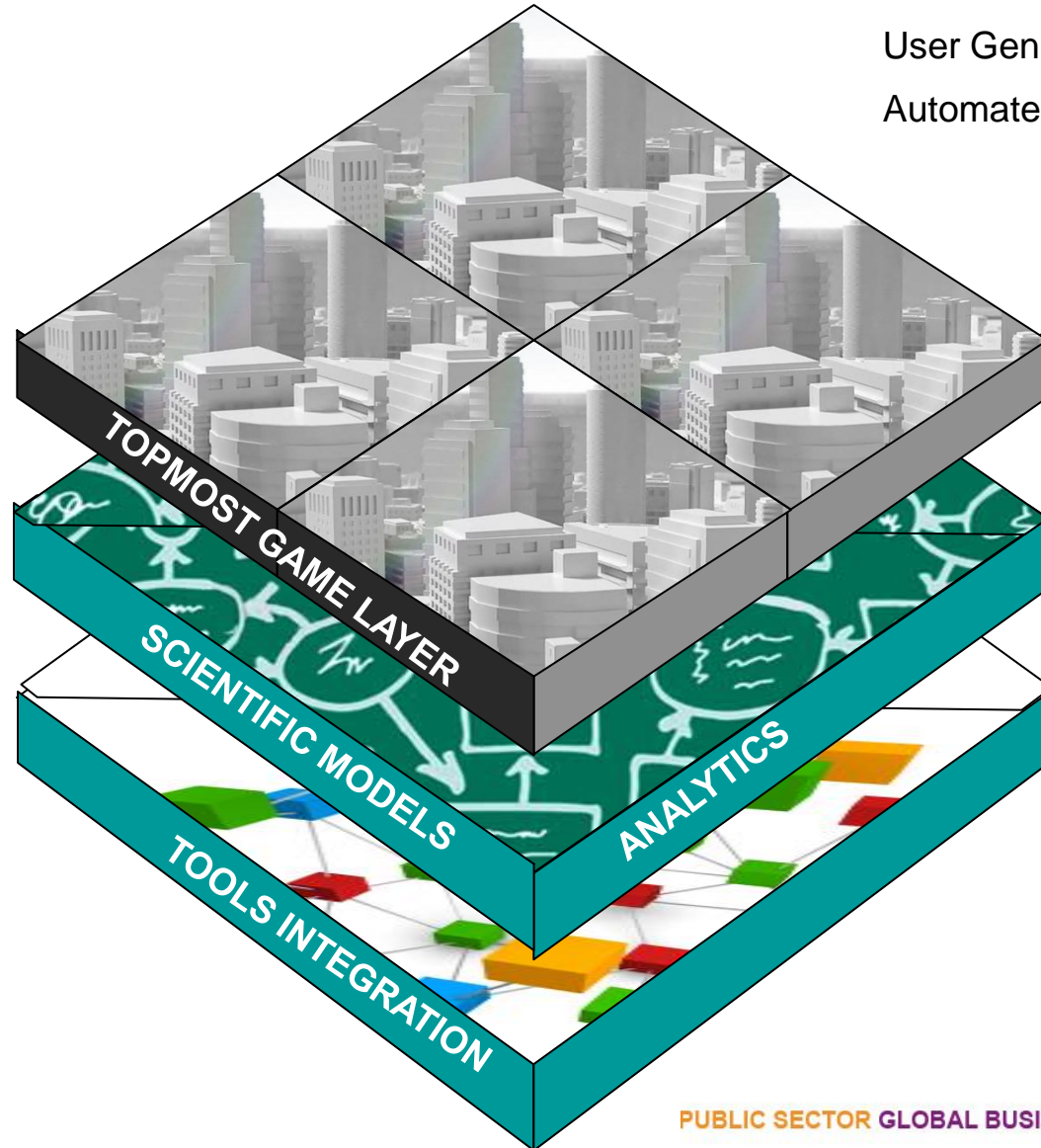
Businesses

Universities

Researchers

Urban Planners

Government  
Stakeholders



User Generated Content

Automated Inputs from Sensors



## Did you Know?

Serious Games are being created to solve complex problems in real time unknownst to the player?



# Success Example: Using Serious Games for Optimal Modeling

## *Folding Proteins*



“ Here's a model of how real proteins work, and a way for you to create a model showing how they fold and stick together. We'll give points and put you on a leaderboard based on how well this matches our model of an optimal solution. Play! ”



- Play a serious game - incentives guide players to optimize models in a competitive environment.
- Players discover multiple optimal models - thus they are collaboratively building up a suite of solutions for the customer

<http://www.youtube.com/watch?v=axN0xdhznhY>

### Group cracks AIDS mystery with computer game

In just three weeks, a group of gamers outfox the world's finest scientific minds and solve a puzzle that may help us fight AIDS.

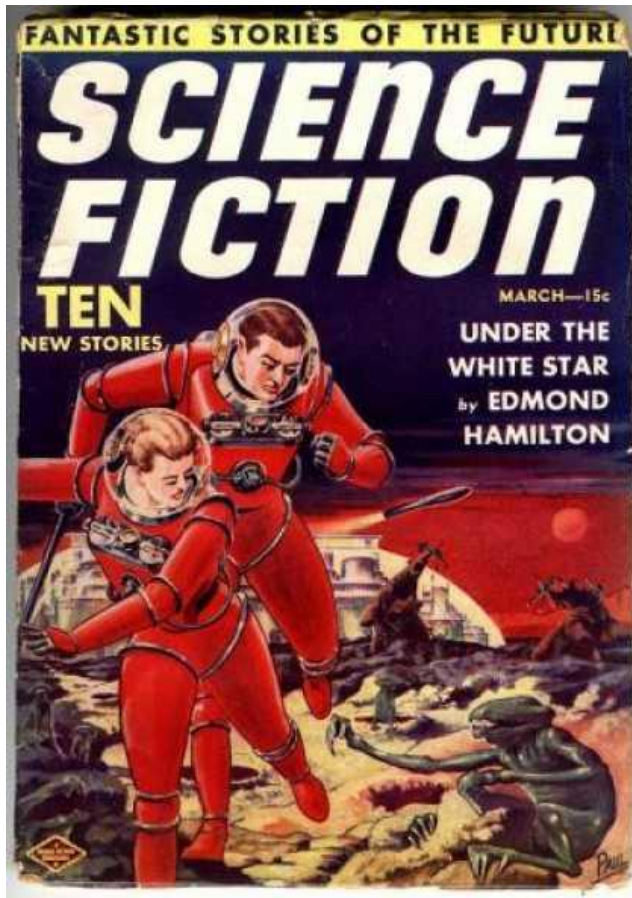
Jack Oughton | News | Education | 23/09/2011

 Like  Be the first of your friends to like this.





## More DARPA Science Fiction?



Use the by-product of casual game play to train a compiler how to better recognize bugs in code.

--- DARPA  
Crowd Sourced  
Formal Verification  
BAA



## One of FIVE Casual Games that we proposed



### Mozart Code

Find where the music sounds off key in order to teach a compiler how to better annotate security problems in code



Imagine, Games with this Muscle...



# Focus 2015: Ethics in Serious Games Design?

- When military-centric games can support real data and real processes for strategic execution, the way that components are weighted in the game (even if used for strictly training) will become a central focus.

Which will have more weight in a strategic targeting game and WHO decides?

How transparent will these weights be??



Saving  
180  
Civilian  
Lives

Vs.

Saving  
Scarce  
Resources

Vs.

Preserving  
Global  
Reputation

Vs...



# In Conclusion

- 1. Gamers are...**
- 2. Games can be extremely adept at explaining complex systems**
- 3. BIG ROI.**

When designed well, they can be used to collaboratively solve very complex problems, whether the players actively realize it or not.

