Working Group 2
Objective Development
“What are we doing here, anyway?”
Mike Ottenberg
(michael.a.ottenberg.ctr@mail.mil)
WG-2 Mission Statement – Specifying the objectives of a professional game is fundamental to meeting the needs of the game sponsors, designers, and analysts. Sponsors commission games to meet educational and/or analytical/research goals. Designers must develop a structure and method for meeting these goals. Analysts must establish solid, achievable, measurable metrics and a plan for measuring them prior to game design. Social and cultural metrics along with other more quantifiable metrics must be considered. Participants in this group will develop methods for addressing how to clarify sponsor goals and for determining the suitability of professional games in achieving those goals. Defining the assumptions and limitations associated with professional game will also be examined. Methods for selecting appropriate game design approaches that correspond to the goals will also be developed. Finally, data definition and collection plans tailored to support objectives will be examined.

I. Introduction

Games can only be successful when their objectives are clearly defined and understood by all of the participants, and when the game is designed specifically to achieve those objectives. Game designers must also develop a plan before the game to collect meaningful, achievable, measurable metrics that support the game objectives.

This chapter will develop methods for addressing how to clarify sponsor objectives and for determining the suitability of professional games in achieving those objectives. Objectives determine the type of professional game under consideration. The chapter will also examine the assumptions and limitations associated with professional games. It will conclude with a short, top level discussion on the methods for selecting appropriate game design approaches, data definition/collection/and analysis and other issues that correspond to the professional game goals. These topics are left for detailed discussion in Chapters TBD (WG-3 to WG-7).

II. Definition of a Professional Game

What is a professional game? Several authors have provided their definition of wargames; definitions that influence the objectives of professional games:
• “A wargame is a combination of “game”, history, and science. It is a paper time machine. Basically, it’s glorified chess.” (Dunnigan)

• “A war game is a simulation of selected aspects of a conflict situation in accordance with predetermined rules, data, and procedures to provide decision-making experience or to provide decision-making information that is applicable to a real-world situation.” (McHughs)

• “A wargame is a warfare model or simulation whose operation does not involve the activities of actual military forces, and whose sequence of events affects and is, in turn, affected by the decisions made by players representing the opposing sides. (1990)” (Perla)

• “A wargame is a warfare model or simulation in which the flow of events shapes, and is shaped by, decisions made by a human player or players during the course of those events. (2008)” (Perla)

• “Such military simulations are made up of two fundamental components. The first is an underlying mathematical model of reality ....thereby providing a synthetic experimental environment that mirrors in certain respects the real range of potential courses and outcomes associated with armed conflict concerned. The second, equally fundamental, component of military simulation games consists of an iterative set of active decision inputs by one or more players to guide the simulated actions of the combatants, and to respond to the changing course of the simulated conflict, in order to maximize their relative or absolute performance in terms of artificial victory criteria established to reflect the real measures of success and failure associated with the actual engagement.” (Sabin)

III. Professional Game Objectives

Sponsors, designers, facilitators, players, and data collectors are several of the many stakeholders in a professional game. All stakeholders in professional games have objectives. The most important objectives are those established by the game sponsor. Professional games are commissioned to achieve one or more of the following categories of sponsor objectives:

1. Organizational or social. Games can be used to generate social cohesion in groups, as an “ice breaker” for groups that need to work together or as a way for different organizational elements to improve their social relationships.
2. Training. Training games are often a subset unto themselves because of the need to incorporate and achieve specific training objectives. In most games there is no “right
way” to achieve the result, in training games there often is a “right way” to do things and this can color and shape the overall design.

3. **Process.** Process games are designed to examine how an activity is or should be done. Often these games are designed to bring different organizations together to rehearse or plan an activity.

4. **Education.** Education games are designed to convey a particular set of ideas or issues to the players, but through unstructured play and without a specific intended process as would be the case for a training game.

5. **Analytic.** Often games are used by analysts to examine a particular activity from different points of view or to identify issues that can be included in subsequent analysis or in exercises.

6. **Research.** Games can be used to gather opinions of those involved, or as actual tools for researchers seeking insight into certain behaviors (for example, inter-group communications, anthropological or social science data collection, etc.)

7. **Predictive.** Can games be used in predictive ways in order to understand how future events will unfold? Your guess is as good as anyone else’s.

   *(Reference: WG1 Game Typology.)*

In addition to sponsor objectives, the other stakeholders involved with professional games have their own objectives.

- Designer objectives
- Player objectives,
- Facilitator objectives
- Analyst objectives, etc. etc.

**IV. Identifying Professional Game Objectives**

*Include discussion from the NWC or NPS lecture (TBD) on how to define objectives. Include discussion of explicit/implicit objectives, etc. Give outline only; reference the lecture.*

The process of study definition for a professional game involves coming to understand the problem the sponsor thinks he has, finding out the problem he really has, and familiarizing him with the scope, capabilities, and limitations of the professional game system proposed to analyze his problem. This is an iterative discussion process, to which the professional game designer and the professional game sponsor each provide vital contributions.
The professional game sponsor provides the problem, the reason the professional game designer exists. He also provides irreplaceable knowledge of the problem, very likely the best data concerning the problem, and the context in which the problem and data exist. The professional game designer cannot hope to know more about these things than the sponsor does. In an ideal case, the sponsor will provide some players for the professional game, to provide the latest, up-to-date understanding of the situation being professional gamed. This is especially valuable for the Threat perspective. What he also can bring are blinkers on the problem that limit his perspective, and he may be subject to political considerations inherent to his organization.

The professional game designer provides in-depth of the proposed professional game process, its capabilities, and its limitations. He will advise the sponsor whether the professional game process would be useful to apply to the problem. He also brings organizational distance from the problem, allowing him to view the problem with a greater degree of objectivity than might be possible for the sponsor. The sponsor and designer can discuss how the professional game system can be modified into a suitable tool to study the problem. With experience, the designer can engage the professional game sponsor in discussion of the problem, refining the study question, and tactfully mitigating the organizational and political constraints the sponsor might bring to the professional game.

Sponsors who are unfamiliar with the strengths and weaknesses of professional games may not appreciate that games can be conducted to achieve a wide range of objectives, or that games designed to satisfy one objective may be unsuitable for achieving other objectives. Broadly speaking, games conducted to achieve social objectives are relatively “loose” in their rules and structure; games run for analytical purposes need to reflect objective reality with some reasonable level of fidelity; and games run for educational and process objectives fall somewhere in between.

The objectives being pursued will determine what outputs are most important. For social games, the process of running the game may be the most important output, and structuring the way that players interact may be more important than recording and analyzing the actions that players take. Similarly, for educational games, what the players learn from playing the game is more important than their in-game actions or the game outcome. The output of process-focused games can be twofold. First, if the purpose of the game is to have players rehearse a process, increased player familiarity with the process is a key output. Second, if the goal is to develop or modify a plan, the plan itself is the key output. Finally, analytical games can have a range of outputs [INSERT LIST HERE?]

As a result of this process, the foundation is laid by both the sponsor and professional game designer for a useful professional game that illuminates the problem and makes it more amenable to effective decisions.
Possibly expand the first paragraph into additional paragraphs. This is the define objectives methodology. Incorporate some components of the following where not already addressed:

- understand the objectives the sponsor thinks he has based upon his definition of the problem
  -- explicit objectives
  -- implied objectives
  -- expected output, format of expected output
- find out the problem he really has and the corresponding objectives
- familiarizing him with the scope, capabilities, and limitations of the professional system proposed to address his problem.
- establish constraints, limitations and assumptions
  --(size, # participants, level/background of participants, venue, scenario, learning objectives, process to be rehearsed/analyzed, questions to be answered, budget, , many, many others) (should we enumerate? This is a handbook ... enumerate in tabular format?)

This is an iterative discussion process,

V. **Clarifying Conditions, Limitations, and Assumptions**

Must not only define the objectives of the professional game, but also the constraints placed upon the professional game by the sponsor or the environment in which the professional game is held.

- Conditions: A restriction imposed by the study sponsor that limits the study team’s options in conducting the study.
- Limitations: An inability of the study team to fully meet the study objectives or fully investigate the study issues.
- Assumptions: A statement related to the study that is taken as true in the absence of facts, often to accommodate a limitation.
- Process
  - Determine Conditions, Limitations, and Assumptions
  - Assumptions to Avoid

Incorporate material and perhaps one or two examples for each of Conditions, Limitations, and Assumptions. Reference Constraints, Limitations and Assumptions: Code of Best Practice in the rest of this section.
VI. **High-Level Professional Game Approaches keyed to Game Objectives**

Assumption: Selection of game objectives drives design and other components of a professional game. While the details remain the responsibility of the other working groups, we can point out that classes of objectives naturally lead to certain design and other component choices.

Objective drives all aspects of professional games to include, but not be limited to:

- Control.
- Scale.
- Opposition.
- Physical Implementation
  - Materials.
  - Process.
  - Player roles
  - Players
- Data Collection and Analysis

We will not address these items in detail since they are the purview of the other working groups. (See other chapters) However, we will apply these principles to the types of games as identified by their objectives.

*Instead of the text format below with one paragraph per sub topic, put the info in a set of tables. One para per game type to discuss unique aspects.*

1. Organizational/Social Games
   - Control.
     - Decision-Making Game
     - Mediated Decision-Making Game
   - Scale.
   - Opposition.
     - Information
       - What information must the interactions of the players produce to achieve the sponsor’s goals?
     - Scenario
2. Education & Training Games

- **Control.**
  - Table Top Game
  - Mediated Decision-Making Game

- **Scale.**

- **Opposition.**
  - Active Red may be preferred
  - Hybrid threat
  - Information
    - What information does the educator want the participants to learn?
    - What process does the educator want the participants to learn?
    - Process being rehearsed, resources required to implement
  - Scenario(s)
    - Reflect the learning objectives
    - May include outlier conditions to teach decision making under unusual circumstances

- **Physical Implementation**
  - *Materials.*
  - *Process.*
  - *Player roles*
    - Participants may take on the roles they normally perform within the organization
    - Role Play
    - Real Play
  - *Players*
    - Actual members of the organization

- **Data Collection and Analysis**
  - *Method of evaluation*
  - *Measures of Effectiveness/Performance*
o student/trainee organization oriented

3. Process Games
   • Control.
     o Mediated Decision-Making Game
   • Scale.
   • Opposition.
     o Hybrid threat
     o Scenario
       o Reflects the process to be examined, developed, evaluated
     o Information
       o Process being rehearsed, resources required to implement,
   • Physical Implementation
     - Materials.
     - Process.
     - Player roles
       o Real Play
     - Players
       o Real world participants.
       o Experts
       o Experienced personnel in advisory/leadership roles
   • Data Collection and Analysis

4. Analytic, Research, and Predictive Games
   • Control.
     o Seminar Wargame
     o Combined Seminar Game
     o Mediated Decision-Making Game
     o Large-Scale Decision-Making Game
   • Scale.
   • Opposition.
     - Active Red preferred
     - Information
       o What information must the interactions of the players produce to achieve the sponsor’s goals?
       o What information does the analyst need from the participants to accomplish the analysis?
   • Physical Implementation
     - Materials.
     - Process.
     - Player roles
       o Abstract play
     - Players
       o Real world participants.
- Experts, especially for data elicitation
- Experts, but experts that can work as a team for other analytical efforts

- Data Collection and Analysis
  - Method of evaluation
  - Measures of Effectiveness/Performance
    - Keyed to the research questions

References

NWC/NPS Lecture on Defining Game Objectives TBD (May be a different source. Clarify with input from Scott Simpkin.


