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Library Game Suite Proposal

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Library Game Suite Proposal

An Interactive Qualifying Project Report:

submitted to the faculty of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

Degree of Bachelor of Science

By

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Abstract

The Library Game Suite Interactive Qualifying Project constructed a detailed proposal for the development of gaming facilities in the Gordon Library. These Game Suites would provide access to classic and modern gaming resources to the students and faculty, for educational, project, and recreational use. Based upon extensive research of gaming facilities in other universities and libraries in the United States, as well as the existing Tech Suite model in the Gordon Library, we have developed several versions to accommodate different budget and space requirements.

Acknowledgements

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1 Introduction

The Game Archive Interactive Qualifying Project (IQP) for 2007 to 2008 focused upon developing a proposal for a game suite model. While the Archive's collection is substantial, there are currently no facilities were these games may be played. Professors also have no options for assigning classic games to be played by students, since many do not own the equipment and software. Furthermore, the gaming areas may serve to distinguish Worcester Polytechnic Institute (WPI) and the Interactive Media and Game Development (IMGD) program, providing a showcase for student projects and industry support.

Existing universities and libraries were heavily researched through personal contacts and web resources. The results were encouraging; many public libraries offer games, and several prominent universities have dedicated gaming labs. Our game suite proposal was based upon a general consensus of policies and designs of these facilities, as well the existing tech suite model in use in the Gordon Library.

The proposal outlines three different models for gaming facilities at WPI; the game suite, the game lab, and the dual-purpose tech/game suite. These models correspond to differing financial budgets, ranging from modifying existing space and equipment to constructing a complete lab. Rather than limit the scope of the proposal to a particular budget, we chose to offer several options for consideration. These models may be implemented as described in the proposal, or used to develop new models for gaming facilities at WPI.

2 Proposal Development

2.1 Proposal Overview

This IQP started with the basis that the library archives had a growing collection of classic consoles and games and wanted to put them to use, rather than just collecting dust. A few alternate ideas were thought of first, such as researching special techniques for preserving digital media and showcasing them to the public. Ultimately, it was decided that these games were made to be played and we needed to come up with a safe and efficient way to share these games in the library. The proposal, located at Appendix B, consists of three options:

- Creating a game suite(s) which is based on the tech suite model.
- Creating a game lab which has computers that have classic computer games and are powerful enough to play the most recent games.
- Modifying an existing tech suite, by upgrading the equipment and adding consoles, to function as both a tech suite and game suite.

2.2 Proposal Description

The game suite(s) would be in the library in rooms similar to the rooms the tech suites use. There are two rooms on the first floor that have not been renovated into tech suites yet, but might be sometime in the future. The room(s) would consist of much of the same furniture and electronics in a tech suite, but there would additionally be a cabinet full of consoles. Students would be able to borrow games from the library and bring them to the suite to play. The game lab, which would be similar to current PC labs around campus, would require new computers that would be equipped with hardware necessary to play modern games. These computers would also be able to play classic computer games which are very important to IMGD students.

2.3 Proposal Development

The goal of the proposal was to bring to reality a feasible gaming room option which would put to use the library's current gaming collection. Based on this goal, the need for such a room needed to be justified. Multiple uses for the room as well as benefits to the library and WPI were

determined. Attaining input and support from various library staff through meetings, information was gained which further developed the proposal.

The proposal expanded, from the relevant feedback of the staff, to cover a wide range of costs, for a combination tech/game suite of minimal cost, to a dedicated game suite as originally planned, to a game lab to support large groups. Policies were then researched and developed for each of these options including a cost analysis.

Additionally, steps were taken to include information on repair costs in case of equipment failure, suggested game listings, as well as equipment requirements to provide as complete and extensive a proposal as possible. As all this information was being compiled, a formal, cohesive proposal was formed, and is included as Appendix B.

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3   Research Findings

3.1   Research Overview

The research for the Game Suite project involved current university and library game lab operations and policies. We investigated common lab and console usage, security and rental policies, room layout, and repair and replacement policies.

3.2   Research Process

Research was primarily conducted through websites, articles, and direct contact through email and telephone. The findings were analyzed to provide general consensus policies, which in turn formed the basis of our proposal project. The standard questions asked during research are listed in Appendix A.

3.3   University Research

3.3.1   Columbia University

The EGGPLANT lab, a game research lab founded in fall 2004 and housed in Columbia University's Teachers College, serves as an interdisciplinary study about games and affects of games on modern culture. It also serves as an introduction for non-gamers to the gaming realm. The lab room is open for approximately thirty hours a week and receives about eight hours of game play a week on various systems. Over the past three years no consoles have broken, but replacement vs. repair costs will be evaluated when the time arrives. In addition to game play, students in the lab also enjoy reading game-related books and guides which are available. The lab does use PC emulators for older systems; however, students prefer playing on actual consoles – as accessing the games via PC is harder and the interface is not as smooth. There is a yearly budget for game purchases, but many students also leave there games in the lab for general use. Game and console loans are currently not allowed except for students in a game design class [1].

3.3.2   Georgia Tech

Georgia Tech houses the Experimental Game Lab, a lab attempting to combine liberal arts with modern technology in the development of games and gaming systems. It focuses on the study of how games work, new game design, and new technology to advance gaming.

Consoles are currently chained to the tables and game cartridges are kept in two locking cabinets. The room is always locked unless a staff member is present; however, some students do have access to the lab after-hours via a magstripe reader. The lab hosts a wide range of systems including PlayStation2, Xbox360, Nintendo Wii, and other older consoles. Their collection has been attained by donations and also bought, usually from eBay, with their lab budget. They have not had any dead consoles yet, but will be seeking repair services vs. replacements due to budgetary issues. Some PC emulators are used to allow original console games to be played, along with adaptors that allow users to use the original console controller. The lab receives about 3-4 hours of game play a day; however, usage drastically increases when newly released games are attained [2].

3.3.3 University of Illinois

The library of the University of Illinois does not have a game room; however, they do have a system set in place to loan games to students. The library does own consoles, but has not formalized any security policies for their use. Therefore, they do not currently allow students to use the consoles. In the future, they plan to build custom hard mounts that will allow them to make the consoles accessible, but not able to be removed from the room. The library does loan out handheld consoles, such as the PSP and DS, but these are stored behind the circulation desk and must be specifically asked for.

The library has a system already in place for games that is very similar to DVD loaning. For current games, students may check them out for three days before needing to be renewed. Older vintage games cannot be loaned out and will be used in the library only when the mounts for their older consoles are finished. They are currently expecting about 60-70 circulations per game before they need to be replaced, and have no estimates for consoles, as they do not use those yet. Emulators are also not used to avoid legal complications [3].

3.3.4 Stanford University

Stanford University boasts a large gaming lab, named the Green Library Media Room, as well as a large collection of games. Games are checked out using student and faculty identification cards, and are subject to a $1.50 per day late fee, up to a maximum of $10.50. The lab contains the following machines: Windows PC, Xbox, Xbox 360, Playstation 2, Playstation3, Japanese Playstation 2, Nintendo GameCube, Atari VCS (Atari 2600), Vectrex, and Apple II [4]. Figures 1 and 2 that follow show the Green Library Media Room.

Figure 1 - Stanford Green Library Media Room

Stanford's game collection features many titles for all of their consoles, as well as the extensive Stephen M. Cabrinety Collection. This collection consists of thousands of classic PC and console games from before 1993, and resides in the library's Special Collections [5].

Figure 2 - Stanford Green Library Media Room

3.3.5 University of Oregon

The Science Library of the University of Oregon has set up a new game loaning system of both consoles and games. They currently have a Nintendo Wii, Sony Playstation3, Xbox 360, and a Nintendo DS, with about 40 games for each platform. Consoles and games are housed behind the circulation desk in locked cabinets. Students and faculty of the university may check out a console, with accessories and a game, for three days – limited to two times per week. Consoles may be booked in advance, and students must sign a user agreement before loans are allowed. Late fees apply and are ten dollars per day for a console, three dollars per day for a game, and a suspension of library services if "extremely" late. Parental controls have been turned on for all systems having such a feature.

When consoles are loaned out, they are put into a padded metallic suitcase with room for the console and accessories. The hope is that these cases will help keep the systems in good condition as they currently have no plans on how to replace consoles. For games that are damaged, they plan to use a DVD resurfacer as a first attempt repair. All games in their collection have been purchased by gift funding.

The library has had a great success in usage, as systems have been loaned out almost continuously for the seven weeks since inception. Game usage has also increased, as 198 games have been loaned out as of November 12, 2007 (average of about 5 times per game) and having only three games that have never been loaned. The new game loaning system accounts for about 6% of the total circulation in the library. The library hopes that in the future, the collection will be used more than a collection for entertainment, but for applications in psychology, sociology, and other fields [6].

3.3.6 Webster University

The Emerson Library of Webster University, located in Missouri, is the home of a recently created gaming room. The room currently contains a PlayStation 2, PlayStation 3, Xbox, Xbox 360, Gamecube, and Wii. The consoles are stored and locked in a cabinet that is located in the room. Students may go to the circulation desk at the library and check out the room for a certain period of time, bringing with them any of the games that the library currently has to offer.

With the amount of use the consoles receive, ranging from an hour per week to a few hours per day, the library expects consoles to last approximately three to five years. Since no consoles have actually failed, the library has yet to replace any hardware. When the problem does arise, they plan to utilize the warranty if it is still applicable; otherwise, they will simply buy a replacement. The library does not use emulators of any kind, due to the legal issues involved [7].

3.4 Library Research

Public libraries throughout the US which allow patrons to check out video games are becoming more and more common. Many libraries believe having the ability to checkout video games will attract a younger audience to visit the libraries more often. The more often people visit the library, the more likely they will notice the usefulness and resources a library has.

Below are some libraries which have already started a collection of video games for patrons to check out. The checkout policies may differ between libraries, however, most are very similar. For example, two video games are able to be checked out per library card. Also, the games must

be returned within a time limit of one week for most libraries and a fee is charged if the game is returned late, which is usually more expensive compared to a late book fee.

3.4.1 Park Ridge Public Library (Illinois)

The Park Ridge Public Library in Illinois offers Xbox, Xbox 360, PS2, and PS3 games for checkout in the young adult department, most of them having game ratings of Everyone and Teen. The games can be checked out by Park Ridge card holders only and must be returned within 3 weeks. A maximum of 2 games can be checked out per library card. The library currently has about 180 titles, and there are plans to expand to an E-rated children's department collection with GameCube and Wii games. Their collection of games is gathered by purchasing them from WebAMI, Best Buy and Amazon.com [8].

3.4.2 Guilderland Public Library (New York)

The Guilderland Public Library in New York circulates console games for the Playstation 2, Xbox, Xbox 360, Nintendo GameCube, and the Nintendo Wii. The library currently has a collection of 102 games, most of them having game ratings of Everyone and Teen, and are loaned on a first-come, first-serve basis for up to seven days. In the future, they would also like to add video games for handheld platforms and the Playstation3. Their collection of games is gathered by donations and by purchasing them from EB Games, Wal-Mart and Best Buy [9].

3.4.3 Rochester Hills Public Library (Michigan)

The Rochester Hills Public Library in Michigan offers games for Xbox 360, Xbox, PS2, PS3, GameCube, Wii, PSP, Gameboy Advance and Nintendo DS for checkout. The library has more than 1,500 games with more than 850 unique titles, most of them having game ratings of Everyone and Teen. The games circulate for 1 week and can be renewed if nobody places a hold on them. Patrons can place a hold on a game if it is already checked out, which allows the patron to be able to check out the game once it is returned. Their collection of games is gathered by purchasing them from EB Games, Wal-Mart, Best Buy and Baker & Taylor [10].

3.4.4 Oakland Public Library (California)

The Oakland Public Library in California is currently circulating only Sony PlayStation 2 games. They chose PS2 video games because it is the most popular platform with their teen patrons. Xbox is a close second and some branches of Oakland Public Library (OPL) plan to purchase Xbox games for their collections soon. The games check out for one week only without renewals or holds. Fines are $1 for each day it is returned late. The Library chooses which games are bought through patron requests and reviews online and in print review sources. They currently circulate a little over 100 games, most of them having game ratings of Everyone and Teen, at each of their 14 branches and they gather their collection of games by purchasing them from EB Games, Best Buy and Baker & Taylor [11].

3.4.5 Milford Town Library (Massachusetts)

The Milford Town Library, recently having finished remodeling, has dedicated a room solely for game use. They have an array of systems including PlayStation2/3, Nintendo Wii, and Xbox360. Games are kept behind the circulation desk in the young adult department. Consoles are not loaned out; however, games can be checked out or used in the game room. Policies are similar to renting out DVD's. The library has experienced overwhelming usage since the remodel [12].

3.5 Emulator Legality Research
3.5.1 Emulator Software

Emulators are PC based software written to simulate the operating system and hardware of another system, otherwise known as embedded systems. Emulators have been written for most gaming consoles, such as the NES, SNES, Gameboy, Atari, and many more. The legality of emulator software has been called into question several times, with clear results.

The actual emulator software is legal to write, distribute, and use; however, some emulators, such as the Gameboy and Gameboy Advance, require an image of the hardware's BIOS, which is copyrighted. As a result, these emulators are not feasible to use.

3.5.2 Emulator ROM's

An emulator ROM is an image of the game cartridges read-only memory. According to the Entertainment Software Association, a person may create a backup ROM copy of a game for archival purposes if it belongs to that person. That person then must make the ROM image themselves, and ensure that it is not distributed over the internet or by any other means [13].

Nintendo of America, however, states that all ROMs are a violation of copyright laws and intellectual property rights [14]. They have brought charges against an offender in the past, but have never gone to trial over the issue. The legality of emulator ROMs therefore remains in question.

3.6 Other Gaming Resources

3.6.1 GameTap

GameTap is a subscription service that allows various games, from consoles and PCs, to be played on a PC. Subscription fees are $9.95 a month or $59.95 a year. There are currently no listed school or group discount prices. Each subscription allows up to eight users to be created – one primary and seven sub-accounts. However, only two users may be online at any single time for each subscription [15].

3.6.2 GameFly

GameFly is the NetFlix version of games. A customizable list of games is created and games are shipped via mail. As games are mailed back, another game is then shipped. The games can be used for as long as the user wants. The number of games one can receive at any single time depends on the type of subscription enrolled in. Prices range from $15.95 a month for one game rental at a time, to $36.95 a month for four game rentals at a time. This service is only available for relatively new systems [16].

3.7 Console Repair and Replacement

3.7.1 Modern Console Repair

Numerous repair services exist for modern game consoles. The manufacturers of the consoles themselves offer repair services, and any consoles under warranty may be repaired for little to no cost. There are also many third party repair services that may be used for modern consoles.

3.7.2 Classic Console Repair

Classic consoles pose a larger problem for repair. Nintendo recently stopped servicing NES and SNES systems, and other manufacturers such as Atari no longer produce or service hardware.

Old School Gamer, a Canadian company, does repair most classic and modern consoles including the Atari 2600, Intellivision, NES, and SNES. They offer free estimates, full detailed cleaning, and warranty on the repairs for 90 days [17].

3.7.3 Classic Console Replacement

There are many websites available that feature classic consoles, games, and replacement parts. These include auction services such as eBay, as well as online game stores. One such company, Video Game Central, sells many NES and Atari 2600 games and systems. Prices for games range from $3 to $30, with Atari games being slightly less expensive on average. Console systems average around $50, and there are modern replacements such as top-loading NES systems available for less [18].

4 Project Results

4.1 Results Overview

The results of this project included background research into the development of gaming facilities in libraries and universities across the country, as well as a detailed proposal for the development of a game suite and lab for WPI. The background research showed an increasingly popular demand for games in libraries and universities. Many libraries have incorporated loaning games to patrons, and even hosting gaming competitions, in an effort to bring more students into the library. By doing so, our research showed that those events helped patrons realize other resources the libraries already have to offer. Universities also have incorporated gaming facilities, from small game rooms to large game labs. These gaming facilities have proved vital for many of the universities constructing and promoting newly created gaming degrees.

The proposal serves as a procedure to create a game suite or lab at WPI. Gathering all the information from the background research and library/faculty staff at WPI, it is a viable document which incorporates many issues such as benefits to WPI, different options to realize a gaming facility, and cost analysis. It, hopefully, will result as a key document in the actual construction of such a space at WPI.

4.2 Accomplishments

The proposal really acts as an extended document displaying the information gathered from our research. Each section portrays a different issue we overcame and we ultimately decided upon the optimal solution given our research and background into each topic.

The first step we took for the project was research other schools and universities. While that was not directly put into the proposal, it served as a foundation for the entire project. We spoke with the heads of game labs at other schools, librarians, and we visited their websites to gain information on what everyone else was doing – then we used that knowledge to take all of the best things and combine them into our overall goal. The initial research laid out many main

points in our proposal; mainly, some of the benefits of having a game suite or lab, and also the major issue of security.

The proposal represents a grand vision for what we would like to be done with the concept, as well as why we think WPI needs such a facility. It gives a basic outline of what is necessary and why, then gives several possible solutions for implementation. Our original mistake was listing one option for both a lab and a suite, but after revisions we made it much more open for interpretation and changes.

We also developed solutions to many of the problems in Section 4.3, although unfortunately not all of them. We managed to reasonably estimate the costs associated with each potential implementation plan, using the tech suite pricing as a model. Security issues were also addressed, for both the lab and the suite. The suite would work similar to tech suites, always locked and closed, while the lab would need to have an ID card reader for access like many other current labs. Finally, we listed necessary policies specifically for these facilities, which would be used in addition to the current library and school policies.

One last question which we dealt with was – if there was a game suite, what games would be necessary to start the collection? To answer this, we came up with a game list, located in Appendix C, which consisted of a "top 5" for each system the suite would potentially hold. The top games were selected based on magazine and game-site reviews, with an additional goal of attempting to cover multiple genres for each platform. Finally, each game was labeled with its publication date on its platform.

4.3   Problems

As with all projects, many problems arise during the realization of an idea. This project was no different; however, most problems ultimately were solved. Among some of the most difficult problems encountered during this project were the security issues in the construction of a game suite and lab. The concept is rather simple; store gaming consoles in a locked room for student and faculty use – however, this cannot realistically be done. Theft and damage to equipment must be accounted for. It was difficult at first to figure out a way to safely lock down consoles,

yet have them be able to be used. Ideas ranged from physically chaining down the console to forming custom mounts to secure the system, yet allow slots to insert the necessary games.

The problem of securing the consoles led to the problem of the controllers. We did not want to see controllers permanently fixed in one stationary location, as it takes away from the playing experience (If you're playing a game and need to avoid something by moving to the left, your body usually wants to move left also along with the controller). Ideas ranged from keeping controllers in cabinets inside the room to keeping them behind the libraries circulation desk.

As expected, the chain of problems continued. If controllers were going to be kept behind the circulation desk, would the library staff be able to provide the space for it, or even have time for the added work load. Similar problems existed for the actual game cartridges, as storing hundreds of games takes a great deal of needed space. Storage and security issues were thus among the greatest challenges.

Another problem encountered was how to deal with equipment failure. If a game was not working, who would be responsible to fix it? How would it be determined if it was the users fault (misuse) or if it was just the system dying? This then led to the discussion and problem of cost. Coming up with ways to sustain a game suite or lab, aside from the initial cost of creating one, was important to consider. If a lab was created, we needed to figure out how it would be monitored and serviced. The cost of paying someone to repair consoles or the creation of a possible work study position to monitor a game lab, all were analyzed, but very hard to definitively answer.

Funding was also a direct initial problem that never was resolved. The cost of a game lab, and even a game suite, is a substantial amount of money. Finding sponsors, or asking the university for money, is difficult, as the same amount of money could be used for so many other options. Without the funding, everything else is placed on hold, which will be one the greatest challenges the future of this project will have.

Finally, space was an issue. The library does have a few open study rooms, and some labs which are not used continuously, however, the viability of using these spaces for the purpose of a game suite had some doubts. We had to substantiate the claim that the game suite would be a better option than another tech suite, or a plain empty study room. The major problem with this situation was not any concrete proof that it would be utilized more than another tech suite. Instead, we used our background research and the experience of other libraries and universities to justify our claim. In the end, most of the major drawbacks and problems in this project were determined and shaped into our working proposal model.

5 Conclusion

The Library Game Suite IQP was based upon developing a comprehensive proposal for a gaming area in the Gordon Library. The proposal outlines several models for implementing this idea, including a modified tech suite, a dedicated game suite, and a full game lab. These options correspond to several levels of budget and space requirements, and may be used to develop further plans for implementation.

Although there were some problems encountered that could not be solved, most of the foundation for beginning the construction of a facility is complete. The final specifications of how to store the games, how to secure the consoles, or the actual layout of the rooms will have to come from someone with the authority to make those decisions; however, any issue that is not a physicality is laid out already – from why WPI needs this to what the rules governing such a room should be.

The gaming facilities would serve several important roles for the WPI community. The initial reasoning for the project was to allow access to the Game Archives for students and faculty members. In addition, upon examining and interviewing other universities and libraries, the need for WPI to distinguish itself with its own facilities became clear. Finally, the gaming areas would allow the IMGD faculty to assign classic and modern games to be played, and subsequently discussed in class.

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Appendix A – Standard Research Questions

1. What security measures or devices do you use for consoles and cartridges?

2. How do you repair or maintain the consoles? Do you replace them instead?

3. How long do they usually last? How much average use do they receive?

4. Is the lab a single room, multiple rooms, a large room? Is it in the library itself?

5. Do you use an outside source for games, or only from your own collection?

6. Do you use PC emulators for console games?

7. Do you use the lab for recreation or education? How so for education?

Appendix B – Game Suite Proposal

Executive Summary

This proposal outlines the creation of gaming labs or suites on campus at Worcester Polytechnic Institute (WPI). These would be used for showcasing the Interactive Media and Game Design (IMGD) degree program, for project work, and for class work. Many other universities and libraries currently have similar facilities in operation, and report positive results for usage and circulation.

This document details several options for developing gaming facilities at WPI, as well as policies and procedures for the gaming facilities, based upon the existing Tech Suite policies of the Gordon Library. These address issues such as security, fees, and usage.

The costing estimates for the three gaming area options are:
- Game Lab - $50,000 – 65,000
- Game Suite - $10,000 – 20,000
- Dual Purpose Tech/Game Suite - $2,000 – 3,000

Background

Gaming labs have become commonplace in public libraries across the United States, and universities are rapidly developing their own labs. Prominent schools such as Stanford already have large labs and video game collections in place, available for student and faculty use. WPI must seek to distinguish itself in this area for several reasons: to enhance the IMGD program, to recruit new IMGD students and faculty, and to gain additional support from the game development industry, especially in the New England area.

Vision

We envision an environment that will be both functional and aesthetically pleasing. Featuring next-generation gaming computers and modern video gaming consoles, as well as classic consoles and DOS games, the areas will enable students to develop games, demonstrate projects,

and enjoy a social atmosphere. By involving the local game development industry, through donations, artwork, and development materials, the addition will serve as a showcase for not only WPI students, but the gaming industry as well.

This proposal focuses on developing a Game Lab or Game Suite in the Gordon Library for both students and faculty to use. The Game Lab/Suite model would provide a comfortable and accessible resource for users to demonstrate projects, test new products, research classic and modern games, and interact with peers.

Benefits

IMGD students currently do not have a specific building for their use like many other popular majors. The IMGD program is growing rapidly, with a large number of students in its third academic year. With IMGD's popularity attracting so many prospective students, the major will continue to grow, and the students will need room in which to complete and showcase their work. Additionally, prospective students will certainly be impressed by framed game artwork from local companies, modern and classic equipment, and industry involvement in the program.

There are few options for IMGD students to demonstrate their Major Qualifying Project (MQP) or class projects. The computers in most labs on campus are for word processing or other simpler tasks and are not acceptable for running modern games and projects. Games have always pushed the hardware industry, requiring the latest in computer technology. Today, games are more complex than ever, and it is necessary to have state-of-the-art equipment that can support these games. This will allow students to present the progress of their projects, as well as develop and test the games themselves.

Professors who desire to have students research classic and modern games for educational purposes also have few options available. Exposure to classic consoles and PC games is critical for the current generation of students, many of whom have little experience with games from the 1970's and 1980's. A large number of games can be used as learning tools, whether it is to teach design and implementation of games, or to demonstrate political issues such as in IMGD2000,

Social Issues in Interactive Media and Games, which has already begun to incorporate specific games into its curriculum.

Usage

The Game Lab/Suite will have two main purposes:

The first will be to educate the students and staff through the use of gaming, whether it is through an assignment to play a certain portion of a game, or use games to complete research. Researchers will have the opportunity to either research the games themselves, or have others play a game while they observe. Students may also use the rooms for their Interactive Qualifying Project (IQP), MQP, or general class projects which need to be presented on adequate gaming computers.

The second will be for school and library use. Periodically, the library or a club, such as the Game Development Club (GDC), could schedule special tournaments or other gatherings in the rooms. This would help to promote both clubs and the library, in order to get students more interested and involved in the social aspects of WPI, as well as familiarizing themselves with the library.

Similar programs invoked by the library, such as tech suites and laptop loans, have had success over the years. Since tech suites became available, they have continuously been used by students. In 2002, tech suites increased from two to four rooms, to the current seven rooms having 5912 bookings in 2007 alone. While usage of these tech suites do vary depending on the week of the term– more usage closer to the end of terms – usage has still increased since its inception. Laptop loans have more than tripled since 2002, having 9759 loans in 2007. In addition, there have been approximately 200 rejections per term due to the lack of availability of the 25 laptops the library currently cycles.

We therefore propose the development of either a Game Lab, similar to existing computer labs, and several Game Suites, based upon the tech suite model.

Game Lab

The Game Lab, like a computer lab, would take up the same amount of space and have the same number of computers as a standard computer lab. Some potential prospective existing locations are labs A and B on the first floor of the library, or the movie lab on the third floor. The lab could either be exclusively for PC gaming, or in addition to PCs, there could be a section furnished for console gaming as well. The basic specifications for the Game Lab follow in Table 1.

Quantity	Item	Estimated Cost
15-20	PC's	
15-20 (5)	Desks (or Tables)	
20-25	Chairs	
		$50000 – 65000

Table 1 - Basic Specifications for a Game Lab

Game Suite

A Game Suite would be configured very similarly to a Tech Suite. There are a few rooms in the library that are the size of a Tech Suite that could currently be refitted to be a Game Suite, or it is entirely possible to incorporate a Game Suite into an existing Tech Suite, and use the room for dual purposes. In the case of a dual purpose suite, such as in Tech Suites #4 and 7, which are larger than the others and could incorporate the gaming consoles without making the room too clustered, the room could primarily function as a Game Suite. However, if all the Tech Suites are full and an extra group wishes to use one, the Game Suite could still be used for Tech Suite purposes.

The preferred scenario would consist of two Game Suites: one for consoles, and one for PC's. The console suite, as described in Table 2, would accommodate many modern and classic consoles.

Quantity	Item	Estimated Cost
1-5	Modern and classic gaming consoles	
1-3	Security shelves for consoles	
1	Widescreen HDTV	
1	PC	
1	Surround sound speaker system	
4-8	Chairs	
		$10,000 – 20,000

Table 2 - Basic Specifications for a Console Suite

The PC suite, as shown in Table 3, would allow for Local Area Network (LAN) multiplayer PC gaming. In this way, there should never be much of a scheduling conflict and students will usually be able to get at least one of the rooms. However, the PC suite would be of more concern under the assumption that an actual Game Lab is not built, as the students could simply use the lab as an alternative.

Quantity	Item	Estimated Cost
2-6	PC's	
2-6 (1-2)	Desks (or Tables)	
4-8	Chairs	
		$10,000 - 20,000

Table 3 - Basic Specifications for a PC Suite

A Dual Purpose Tech/Game Suite would also work as well for very little cost as shown in Table 4, used for console gaming in it with perhaps one or two PCs in addition.

Quantity	Item	Estimated Cost
1	Upgraded PC	
1-5	Modern and classic gaming consoles	
1-3	Security shelves for consoles	
		$2,000 – 3,000

Table 4 - Basic Specifications for a Dual Purpose Tech/Game Suite

Current Tech Suite Costing

The following costing information listed in Table 5 is based upon the existing tech suite model, provided by Mary Beth Harrity of the Academic Technology Center as of January 25th, 2008. This pricing represents the cost of one machine, and the current tech suite configuration for a new room. Additional renovations and wiring will add roughly $5,000 - $10,000 to the cost. For a lab setup, an additional $5,000 is required for the podium and ceiling projector equipment and installation.

Quantity	Item	Estimated Cost
1	NEC 50" XM5 Plasma TV with mounting materials	$3,900
1	Extron System 7SC with interfaces and cables	$6,500
1	Rack with shelves and power supply	$700
1	VCR and DVD Player	$425
1	Dell Workstation with 24" monitor	$1,750
1 (6)	Custom table (and chairs)	$2,600
		$15,875

Table 5 - Specifications for a Gordon Library Tech Suite

Equipment Specifications

The costing information listed above may be modified to fit the needs of a game suite. Specifically, extra RAM and a powerful graphics card may be added to the machine, for roughly $300-500 extra. The prices below are approximated values based on the existing tech suite prices, as they might apply to or be similar to that of a Game Suite.

Additional licenses for development software may be required. The software needs to include Autodesk Maya and 3DSMax, Microsoft Visual Studio, and the C4 game engine. Other software such as DOSBox (a DOS emulator for running classic PC games) is available for free.

In order to adequately run modern games, the equipment listed below, with cost estimates, would be ideal. These PCs would be able to run most current games on a "High" graphical setting, and would last at least 3-4 more years before becoming obsolete. Additionally, the audio and video components will last for 5-10 years.

PC (from Dell.com, XPS 420 Ultimate Entertainment, ~$2,000, January 15, 2008):

- Intel Core2 Quad Core processor
- 3 GB RAM
- 512MB Nvidia GeForce 8800 GT
- DVD Drive
- Microsoft Windows Vista

Furniture:

- Table ($1300)
- Chair ($200)
- Custom console mounts and rack ($200)

Audio for console suite:

- Surround sound system for television (included in television cost)
- Optical/HDMI cables for newer consoles ($40 per console)

Video for console suite:

- Widescreen HDTV/Monitor ($3900)
- A/V input switch box for changing console input to the A/V system ($200)
- Component/HDMI cables for newer consoles ($40 per console)

Classic Consoles (current status of library's current collection in parenthesis):

- Nintendo 64 (working)
- PSOne (working)
- Sega Dreamcast (not tested)
- Atari 2600 (broken)
- Intellivision (not tested)
- Sega Genesis (not tested)
- Commodore 64 (not tested)
- Nintendo ($50)
- Super Nintendo ($60)

Modern Consoles:

- Xbox ($100)
- Xbox 360 ($300)
- Playstation 2 ($130)
- Playstation 3 ($400)
- Gamecube ($50)
- Wii ($250)

Policies

In an attempt to keep the Game Lab and Game Suite in good working condition, a suggested list of security and procedural policies are supplied below. These policies and procedures are largely based upon existing procedures the library has approved for Tech Suites and laptop loans. The

objective is to provide a satisfying gaming environment yet keep the designated areas safe and secure for the length of its existence.

General Policies

Both the Game Lab and Suite will be a state-of-the-art gaming facility and thus incur some common security and maintenance policies. Only WPI faculty, staff, and students may schedule the use of the facilities as the rooms will be locked otherwise. Outside research projects or prospective students wishing to gain access must get appropriate approval prior to gaining access. Under no circumstances should game systems, accessories, PC's, or miscellaneous equipment be tampered with or removed from the facility. In order to avoid any equipment damages, no food and drinks are allowed at any time. In addition to these policies acceptable internet use policies should apply. These facilities will close 30 minutes prior to library closing to allow library staff enough time to properly secure the area.

The Game Lab

Due to the different atmosphere and structure between the Game Lab and Game Suite, a few room-specific policies are also needed to ensure a secure and safe environment. The Game Lab is designed for large groups of students to explore gaming. With this in mind, any audio should only be accessed via headphones. If a scheduled class or approved research project is in session, the lab will not be available for access unless approved by the class or project instructor. Swiping a WPI ID card will be required to gain access to the lab. This will help ensure that the lab will be used for academic use during scheduled classes as well as provide sufficient security throughout the day.

The Game Suite

Unlike the Game Lab, access to the Game Suites must be reserved. Game Suites may be reserved at the library circulation desk for two hour periods. Longer periods of time will be permitted on an as-available basis if no other groups are scheduled. The two hour time limit will be strictly enforced if others are waiting. Overdue fines for longer durations will apply and shall be twenty-five cents per minute or fifteen dollars per hour. If a work area needs to be reserved for a project or research experiment, the room may be reserved up to two weeks in advance. For

normal use, reservations may be made up to four days in advance. If longer durations of game suite use are needed for research study or faculty projects, prior approval is needed.

Due to the smaller size of the Game Suite, game audio is not restricted to using headphones; however, the volume must be kept under a level which will not disturb anyone outside of it. The door must also remain closed and the room locked when not in use. For security reasons, each student must complete an Equipment Agreement Form in which they acknowledge financial responsibility for the equipment in the game suite. This agreement is valid for one academic year. Current (new) replacement costs and an additional fee for 5% will be incurred for all missing, damaged, or broken equipment.

Appendix C – Top Game List

<u>Classic PC:</u>

Doom (1993)

Myst (1993)

Sid Meier's Civilization (1991)

Sim City (1989)

Zork (1980)

<u>Modern PC:</u>

Bioshock (2007)

Elder Scrolls IV: Oblivion (2006)

The Orange Box (2007)

The Sims 2 (2004)

World of Warcraft (2004)

<u>Atari 2600:</u>

Asteroids (1979)

Adventure (1979)

Donkey Kong (1982)

Pitfall! (1982)

River Raid (1982)

<u>NES:</u>

Contra (1988)

Final Fantasy (1988)

Metroid (1987)

Super Mario Bros (1985)

The Legend of Zelda (1987)

SNES:

Chrono Trigger (1995)

Final Fantasy VI (1994)

Super Mario World (1991)

Super Metroid (1994)

The Legend of Zelda: A Link to the Past (1992)

Genesis:

Gunstar Heroes (1993)

Mortal Kombat (1992)

Sonic (1991)

Sonic and Knuckles (1994)

Zero Wing (1991)

Playstation:

Castlevania: Symphony of the Night (1997)

Final Fantasy VII (1997)

Gran Turismo (1998)

Metal Gear Solid (1998)

Silent Hill (1999)

Playstation2:

Final Fantasy XII (2006)

God of War (2005)

Grand Theft Auto: San Andreas (2004)

Metal Gear Solid 2 (2001)

Shadow of the Colossus (2005)

Playstation 3:

Devil May Cry 4 (2007)

Ninja Gaiden Sigma (2007)

Ratchet & Clank Future: Tools of Destruction (2007)

Resistance: Fall of Man (2006)

Uncharted: Drake's Fortune (2007)

Nintendo 64:

Mario Kart 64 (1997)

Perfect Dark (2000)

Star Fox 64 (1997)

Super Mario 64 (1996)

The Legend of Zelda: Ocarina of Time (1998)

Gamecube:

Eternal Darkness: Sanity's Requiem (2002)

Metroid Prime (2002)

Resident Evil 4 (2005)

Super Mario Sunshine (2002)

The Legend of Zelda: Wind Waker (2003)

Wii:

Metroid Prime 3: Corruption (2007)

No More Heroes (2008)

Super Mario Galaxy (2007)

Super Smash Bros Brawl (2008)

The Legend of Zelda: Twilight Princess (2006)

Xbox:

Halo (2001)

Halo 2 (2004)

Prince of Persia: The Sands of Time (2003)

Star Wars: Knights of the Old Rebublic (2003)

Tom Clancy's Splinter Cell: Chaos Theory (2005)

Xbox 360:

Assassin's Creed (2007)

Dead Rising (2006)

Gears of War (2006)

Halo 3 (2007)

Mass Effect (2007)

Optional Games

Classic PC:

Asteroids (1979)

Command and Conquer (1995)

Duke Nukem 3D (1996)

Dune 2 (1992)

King Quest V (1990)

Master of Orion (1993)

Might and Magic (1987)

Panzer General (1994)

Pong (1972)

Red Baron (1990)

Solaris (1986)

Space Invaders (1978)

Space Quest III (1989)

System Shock (1994)

Quake (1997)

Ultima IV (1985)

Ultima V (1988)

Ultima VII (1992)

Ultima Online (1997)

Ultima Underworld (1990)

Ultima Underworld 2 (1992)

Warcraft (1994)

Wolfenstein 3D (1992)

X-COM (1993)

Modern PC:

Black and White (2001)

Call of Duty (2003)

Call of Duty 4: Modern Warfare (2007)

Sid Meier's Civilization IV (2005)

Diablo (1996)

Diablo 2 (2000)

EverQuest (1999)

Elder Scrolls III: Morrowind (2002)

Sim City 4 (2003)

Starcraft (1998)

The Sims (2000)

Thief (1998)

NES:

Blaster Master (1988)

Metal Gear (1988)

Super Mario Bros 2 (1988)

Super Mario Bros 3 (1990)

SNES:

Donkey Kong Country (1994)

Secret of Mana (1993)

Super Mario Kart (1992)

Genesis:

Contra: Hard Corps (1994)

Sonic 2 (1992)

Sonic 3 (1994)

<u>Playstation:</u>

Final Fantasy VIII (1999)

Final Fantasy IX (2000)

Final Fantasy Tactics (1998)

Resident Evil 2 (1998)

Vagrant Story (2000)

<u>Playstation2:</u>

Final Fantast X (2001)

Grand Turismo 4 (2005)

Katamari Damacy (2004)

ICO (2001)

Metal Gear Solid 3 (2004)

Okami (2006)

Price of Persia: The Sands of Time (2003)

Silent Hill 2 (2001)

<u>Nintendo 64:</u>

Banjo-Kazooie (1998)

Conkers Bad Fur Day (2001)

Goldeneye (1997)

Super Smash Bros (1999)

The Legend of Zelda: Majora's Mask (2000)

<u>Gamecube:</u>

Killer7 (2005)

Mario Kart: Double Dash (2003)

Pikmin (2001)

Resident Evil 4 (2005)

Super Smash Bros Melee (2001)

Wii:

Trauma Center: Second Opinion (2006)

Xbox 360:

BioShock (2007)

Call of Duty4: Modern Warfare (2007)

Prey (2006)

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