

Ninja X: A Game-Based Training Simulation Solution

Melissa Harbour

BACKGROUND

Company X is one of the largest financial management firms in the U.S. with 180 offices in America and 10 locations abroad. Company X's mission is to provide the industry's best customer service while maintaining fast, accurate and secure financial solutions for its corporate and individual customers. Employees are the organization's number one resource and as such, it is imperative that employees are well-trained and uphold the company's policies and procedures.

INSTRUCTIONAL PROBLEM

Company X employs over 50,000 employees and is constantly growing. To keep up with customer demand, newly hired employees need to become oriented to the work environment quickly. Company X has also found that employees who learn and internalize the company values during their initial training have the highest rate of retention and loyalty. Furthermore, since employees often collaborate with or transfer to other locations, it would reduce the time and money spent on orientation training if all locations utilized the same training platform.

With so many employees and new hires, it has been difficult for Company X to manage onboarding training consistently and effectively. Recent customer satisfaction surveys reflect the inconsistencies between locations and negatively affect the company's image. Company X is in need of a training solution which will 1) orient new employees to the workplace environment and procedures, 2) motivate employees to understand and uphold company policies and values and 3) provide a uniform initial training across all locations.

PROPOSED SOLUTION: NINJA X TRAINING GAME SIMULATION

Ninja X will provide a training program that can effectively solve the training needs of Company X by engaging employees in a secret ninja mission to learn about Company X and become master employees. When new employees begin Ninja X, they will be introduced to their sensei who will serve as their guide throughout the training. The sensei will inform players of their missions which will include: becoming familiar with the large Company X campuses, learning about Company X management and contacts, Company X policies and procedures, and how to operate Company X software among other job-specific instructional content. Employees will guide their characters around the virtual Company X campus to complete the training modules in order to unlock new ninja moves and level up from white belt to black belt. Employees and their managers will be able to track a player's progress and mastery of the training content, and managers will have control over which training modules are available for which employees. Players will be able to customize their avatar as they level up and choose which moves they want to learn. Whether employees decide to cartwheel or backflip around the Company X campus, they will be completing valuable training and be motivated to learn as much as they can about Company X.

A game-based training simulation is an appropriate solution for addressing all the needs of Company X while providing a cost-effective, engaging learning experience. The proposed training game, Ninja X, will serve as a replacement for many onboarding training topics which are currently developed and delivered by Human Resources (HR) representatives at each office location. In addition to providing a consistent training solution, Ninja X offers the following benefits:

- **Interactivity:** Learners will engage with a virtual environment which will gain and hold their attention and provide a context for the training content.

- **Chunking:** Learners will be presented with new information and practical skill applications in sections to aid in information processing and retention.
- **Motivated Learning:** Learners will possess a personal interest in mastering the training content because they will control their individual learning pace and be able to track their progression through the game interface.
- **Condensed Experience:** Simulations offer new learners exposure to situations that may take years to experience on the job through a safe environment where learners can experiment without negative implications for themselves or the company.
- **Authenticity:** A simulation game ensures a realistic and authentic training experience at a low cost.
- **Fun and Exciting Gameplay:** In Ninja X, learners begin as novice ninjas and level up through learning and demonstrating new skills in order to achieve master ninja status which signals completion of the training. Displaying information in an interactive and true-to-life manner reduces time to comprehend, retain and apply the technical knowledge.

TECHNOLOGY ANALYSIS

Ninja X will be a 3-D simulation game distributed through a downloadable software package. The best tool to develop this software is Unity game development engine. Unity is a popular development platform which is used to develop entertainment games as well as simulations for a variety of military, government, corporate and nonprofit organizations.

Key features of Unity which make it an ideal choice for this project include high-quality graphics and audio capabilities, multiplatform publishing, optimized performance tools, and the ability to collaborate with a team of developers and designers. There is also extensive Unity training and documentation available as well as an active community of supporters.

Since Ninja X is a custom training solution, developing the simulation using Unity will take considerably more time than modifying an existing training product; however, the benefits of the customized game will more than compensate for the development time.

NEEDS ANALYSIS

Audience

The training game simulation is targeted at new employees of Company X. Approximately 65% of last year's 3,000 new employees were in the customer service department and 80% of new employees were under the age of 35. Customer service is a highly interactive field. A simulation will provide an authentic and engaging initial training in a format that appeals to the young demographic. Current employees may also complete portions of the training simulation as a refresher on company policies and procedures. As employee's age and technical skills vary throughout the company, the training simulation game will be presented in an intuitive and easy to use interface.

Instructional Setting

Ninja X will be implemented during the initial training period of new employees and will supplement other training procedures as necessitated by the company's policies. The project's technical support team will facilitate the installation of the training software application on the 10 computers in each location's training computer lab. The computers will need to have an active internet connection and minimum technical specifications which will be detailed during the planning phase of the project. Company training facilitators will be trained to use Ninja X and will provide ongoing training and support to team managers and new employees. The training facilitators will introduce learners to the software and then learners will complete the training individually.

BUDGET

The total estimated budget for the design, development and initial implementation of Ninja X is \$2,126,831. A breakdown of the major areas of the budget and the required resources are below.

Human Resources.....	\$ 1,956,831
Equipment and Materials.....	\$170,000
Total.....	\$2,126,831

Human Resources

# of Staff	Position	Base Salary + Benefits	Time	Cost
5	Instructional Designers	80,000 + 24,000	1 year	\$520,000
1	Project Manager	95,000 + 28,500	18 months	\$185,250
3	Subject Matter Experts	100,000 + 30,000	3 weeks	\$22,500
8	Simulation development programmers	70,000 +21,000	20 months	\$1,213,333
10	Company X training facilitators	63,000 + 18,900	1 week	\$15,748
Total				\$ 1,956,831

Equipment, Materials, & Travel

Training Materials (User workbook, job aids, trainer workbook, etc) Copies, lamination, pens, folders, etc.	\$10,000
Possible computer upgrades	\$75,000
Servers/ Networking Upgrades	\$30,000
Travel Accommodations (flights, hotels, meals, etc)	\$20,000
Audio production	\$35,000
Total	\$170,000

TIMELINE

The design, development, and initial implementation of Ninja X will take approximately 2 years. Each phase of the project is briefly described below.

Analysis and Planning – 14 days

The core project team, including the project manager, key instructional designers and developers, and key stakeholders, will meet over the course of 14 days to determine the instructional needs and requirements of the Ninja X development project. During this time, the team will confirm the timeline, budget, and other project phases.

Design – 6 months

The instructional designers will work with SMEs to design the training materials that will be incorporated into Ninja X. The development team will also work with SMEs and instructional designers to map out the simulation

Task Name	Duration
Analysis & Planning	14 days
Design	6 months
Training design	90 days
Simulation design	90 days
Development	12 months
Develop first draft of simulation	5 months
Formative evaluation	2 weeks
Develop second draft of simulation	3 months
Formative evaluation/ client feedback	2 weeks
Develop final draft of simulation	2 months
Develop Train the Trainer materials	1 month
Implementation	14 days
Train the Trainer Course	7 days
First group of users complete Ninja X training	7 days
Evaluation	7 days
Total Time	~ 2 years

software components. The design phase will take approximately 120 days, which will ensure the following development and implementation phases will meet all expectations of the client.

Development – 12 months

The software development team will need at least two months per one hour of simulation training. As Ninja X will include roughly ten hours of training, the simulation will take approximately one year to develop. This development time includes formative and summative assessments as well as opportunities for the client to provide input and feedback. Also, the train-the-trainer course for Company X training facilitators will be developed during this phase.

Implementation – 14 days (first Company X employee users)

The train-the-trainer course will be a one week training and then Company X will begin using Ninja X with new employees. Employees will complete the ninja X training in approximately one week.

Evaluation – 7 days

The project manager will work with the team to evaluate the success of Ninja X in order to provide future recommendations to the client and the project team.

Design Document

<i>Learning Objective</i>	<i>Assessment</i>
Learners will be able to identify Company X management and key contact personnel when given either a position title or a personnel name with 80% accuracy.	<ul style="list-style-type: none">• Assessment will occur through a mini game. Learners will be given the task to label pictures on a wall which will either be missing the pictured individual's name or position title. Learners must type in the correct name or position with a limited number of hints to successfully complete the assessment.
Learners will be able to locate key buildings, offices, and rooms on the Company X campus within a given amount of time with 80% accuracy.	<ul style="list-style-type: none">• Learners will be assessed on their ability to navigate the campus in a timely manner throughout the training simulation by being required to guide their character to key locations within a given amount of time. The given time will vary based on the distance of the character from the location, but will be constrained to a minimum time which will limit the chance of players randomly going to the correct place unintentionally.
Learners will be able to demonstrate Company X privacy procedures regarding client information when presented with a novel role-play scenario with 100% accuracy.	<ul style="list-style-type: none">• Learners will be assessed on their application of Company X's privacy procedures through a role-play scenario mini game in which learners will complete a text-based interaction with a client. To successfully complete the scenario, the learner must follow all privacy procedures while interacting with the client.
New employees will demonstrate operation of Company X client information software when presented with a novel scenario with 100% accuracy in less than 15 minutes.	<ul style="list-style-type: none">• Assessment will require learners to listen to a sample client phone call and use the client information software to input the data as the client provides it. In order to successfully complete the assessment, the input data must match the data provided and be input into the proper field, and must be completed in less than 15 minutes.
New employees will be able to describe the 4 core values of Company X given visual and auditory resources with 100% accuracy.	<ul style="list-style-type: none">• Learners will be asked to search for information about the 4 core values through their interactions with other characters in the simulation. Characters will either tell learners about a core value, provide an example of the core values, or give them a picture or symbol that represents a core value. These interactions will be recorded in the learner's journal. To complete the assessment, learners must link and organize this collected information to reproduce their understanding of the 4 core values of Company X.

4C/ID MODEL

Ninja X will be designed and developed using the 4C/ID (Four Component Instructional Design) model. The four components included in the model are: (1) Learning Tasks, (2) Supportive Information, (3) Procedural Information and (4) Part-Task Practice. The 4C/ID model focuses on supporting individual learning tasks within the context of complex whole task learning, which, given the multifaceted learning objectives of this project, is an effective approach to organizing and sequencing this simulation's instructional content. The model recommends sequencing tasks by difficulty and providing authentic situations for learners to practice the tasks. As the learner's skills progress, the learning environment becomes more complex and learners receive decreasing levels of scaffolding. By encouraging integration of learning tasks in the part-time practice, the 4C/ID model provides a framework which supports learners' understanding and performance of complicated tasks which involve a wide range of prerequisite

skills. While learning the procedures, knowledge, and skills necessary for becoming a member of the Company X team, new employees need to master the basic tasks as well as their integrated applications in order to become effective, efficient employees as quickly as possible.

CONTENT SEQUENCING

The instructional content within the Ninja X simulation will be divided into 3 sequential segments: Introduction, Primary Quests, and Secondary Quests. The Introduction activities will be linear; however, the Primary Quests and Secondary Quests activities will be non-linear and interactive. The Primary Quests will include easier constituent skills of the more complex tasks encountered during the Secondary Quests.

Introduction

Ninja X will begin with a brief welcome followed by the character creation section. Users will begin in the outside courtyard and complete a tutorial for the simulation controls. Users will practice the controls while uncovering the backstory of Ninja X. When users complete the control tutorial, they will receive the first quest related to the instructional content: "4 Core Values".

Primary Quests: 4 Core Values, Navigation, Company Personnel, Initial Paperwork

The 4 Core Values quest will instruct users to find and speak to 6 individuals in different locations around the map. While completing this first quest, users will receive the other primary quests, "Navigation", "Company Personnel", and "Initial Paperwork", when components of those tasks are encountered. For instance, when users travel to the first new location, they will unlock the Navigation quest, which requires users to travel to each location on the map. The user will have control over the order of Primary Quests to an extent, but certain activities will be integrated to provide a more authentic learning environment. For example, in order to find one of the individuals for the 4 Core Values quest, the user must complete a task in the Initial Paperwork quest. When each Primary Quest has been completed, the user must complete an assessment, which if completed successfully, will trigger a Secondary Quest to begin.

Secondary Quests: Client Interactions, Software Training

The Secondary Quests require users to have prerequisite skills, and therefore require successful completion of at least one Primary Quest. For example, the Client Interactions quest involves applying certain policies and procedures which are covered in the Initial Paperwork quest. The Secondary Quests follow the same semi-structured sequencing as the Primary Quests, with users being able to choose the order of completion to some extent. However, new employee's managers must approve the beginning of the Secondary Quests in order to encourage consistent monitoring and support for new employees.

TASK ANALYSIS

- Learners can use mouse and keyboard keys to play the game
 - Click buttons with mouse
 - Move with arrow keys
 - Interact with objects by dragging and dropping with mouse
 - Use Spacebar to jump
 - Use other keys to do ninja tricks
- New employees will be able to describe the 4 core values of Company X (4 Core Values Quest)
 - Customer Service
 - Trustworthy
 - Accuracy
 - Security

- Learners will be able to locate key buildings, offices, and rooms on the Company X campus (Navigation Quest)
 - Building A
 - Your office
 - Manager's office
 - Offices 1-5
 - Building B
 - Human Resources
 - Offices 6-10
 - Building C
 - Cafeteria
 - Payroll Office
 - Human Resources Office
- Learners will be able to identify Company X management and key contact personnel (Company Personnel Quest)
 - Learners can determine who to contact given a novel situation requiring personnel involvement
 - Learners can identify the position of a given employee's name or picture
 - Learners can match a name with the corresponding picture
 - Learners can determine which job position is involved in a novel situation
 - Learners can distinguish position functions from one another
 - Learners can list the functions of each key position within Company X
 - (Key personnel include: HR Representative, Manager(s), Corporate officials, etc.)
- New employees will demonstrate operation of Company X client information software (Software Training Quest)
 - Learners can perform a given task using the client information software
 - Learners can locate the key features of the software
 - Learners can operate computer mouse and keyboard to interact with software
- Client Interactions/ Policies (Privacy Policy Quest)
 - Learners can apply privacy policy rules to novel situations
 - Learners can distinguish situations which require privacy policy procedures
 - Learners can state privacy policies and procedures
 - Learners can demonstrate privacy policy procedures