

Empowering Communication

Presented by Team Security



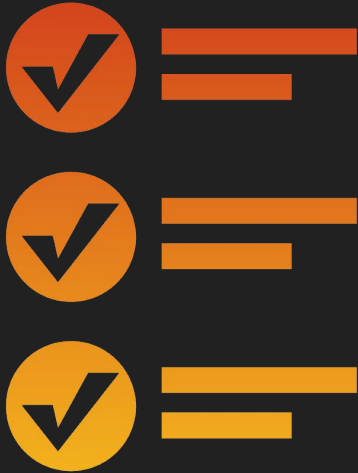
Our Sponsor/Company

LC Technologies, Inc.

- Small Business in Fairfax, VA
 - Started in 1986
- Communication devices with eye tracking capabilities
- Clients with severe physical disabilities
 - ALS, Cerebral Palsy, Stroke, etc.
- Products sold through trained distributors
 - Domestic and abroad
- Operates in 44 countries



Agenda



Original Business Plan

IT Solution

Changed Business Process

Solution Implementable

Demonstration

Original Business Plan



Business Issues

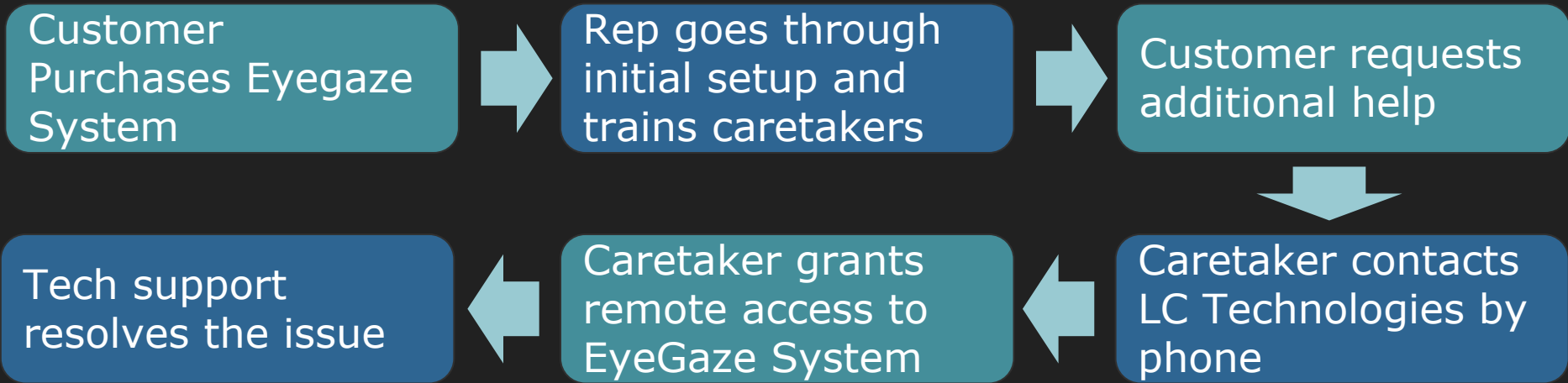
We are a small company competing against a large company, and the market is limited in size. *We don't want to make more people sick!*

The avenue to revenue:

- Take max share possible
- Do well what our competitor cannot
- Profit!



As-Is Business Process Flow



Business Case for Change

- LCT has projected growth that its current support reps cannot accommodate - to compensate for this
 - Increase the price of device
 - Hire more people
 - Cut back on types of support provided
- The Knowledge Base solution will
 - Eliminate the need for support labor on simple issues
 - Focus on customers specific needs
 - Maintain an edge over the competition on customer support experience



Implementation Challenges

Database debugging

Web pages must automatically format around template data



Grid Interface compatibility

Grid

Must operate on all past and current eyegaze systems



Training

The solution must be easy to understand for non-tech savvy users



Support Topics

Missing or incomplete documentation



IT Solution Part 1



High Level Design

Compile Relevant documents and Media for database

- Identify commonly asked questions
 - Collecting samples of call support topics
- Create a database that organizes
 - Identify important topics that lack instructional or troubleshooting material



Create Website with hierarchical structure

- Make it easier to find the cause of issues by answering simple questions



High Level Design Contd.

Create an interface that makes the self help tool accessible to patients

- Create a Grid interface with large buttons that will be used with the eye tracking camera
 - Utilizes user inputs based on set gaze duration
- Website includes invisible forms, overlays, or hotkeys to use commands from the Grid interface



Secure the database to protect PHI

- Database resides on the same network that contains sensitive patient information
- Will be secured by separating out the database from the rest of the network
 - Secure enclave
 - Restricting access of the local machine



Deliverables

Gagandeep Singh

Takin Tadayoni

Aakash Sharma

Michael Chhea

Susan Thoun

2

Development Plan

3

Beta Test Plan

4

Quantification Plan

5

Training Plan

6

Turnover Plan

Risks

- Vulnerabilities that lead to protected health information (PHI) leaks
 - Hackers accessing unauthorized HIPAA protected data from LCT servers
 - Users on the local network may gain access to patient data on the NAS
- LCT Distributors refusing to adopt/promote the knowledge base
 - Distributors are not bound by contractual agreements
 - Entirely up to the distributors to provide such resources
- Lack of incentives to use these resources



Dependencies

- Distributors training new patients on using the resource
- LCT installing software that allows access to the Knowledge Base on all future eyegaze systems
 - New gridsets that provide the website UI need to be added
 - Shortcut to the knowledge base needs to be added to the user's home page



IT Solution

Part 2



Test Parameters

Front End

- Grid Application Interface
 - All web pages respond to Grid commands
 - Grid buttons activate using any of three access methods
- Web Pages
 - Formatting is compatible with Grid interface
 - All links lead to live pages
 - Knowledge base is intuitively navigable



Test Parameters

Back End

- Database
 - Help documents for each issue are stored & accessible
 - Interactive Help tool pulls the correct information for each help topic
- Security
 - The system running the knowledge base is isolated on the network
 - Web interface cannot be exploited as an attack vector



Test Conductors

LCT Distributors

Distributors may test the front-end product on their demo eye trackers to provide valuable insight based on real-world sales experience.



Team Security

Each team member is responsible for testing their implemented features during agile development. The team will also beta test all features before launch.



Our Sponsor

All product functionality and backend code will be reviewed by our sponsor to ensure that the deliverables listed in the Client Buyoff are provided.



Sample Test Script

Test Case #1 Interactive Knowledge Base - Interference Issue Test Scenario

| Steps | Instructions | Requirement | Result | Comment |
|-------|---|--|--------|---|
| 1 | Launch the Interactive Knowledge Base along with the Grid interface | Both programs launch and dock successfully | Pass | |
| 2 | Navigate by answering questions based on the symptoms listed in the test scenario | All questions follow the structure laid out in the website plan | Pass | |
| 3 | Verify the title and contents of the resulting help page(s) | The title and contents are relevant to the issue & match the website structure | Pass | |
| 4 | Read through the steps listed in the help page(s) | All steps match the original help document provided by LCT | Fail | The final step is cut off due to a formatting error |

Retest Strategy



- 1 Evaluate Feedback
- 2 Adjust Requirements
- 3 Analyze & Redesign
- 4 Set Up Test Environment
- 5 Conduct Tests
- 6 Gather & Document Feedback

Concentrations Utilized

Web Development
& Multimedia
(WDM)



Build a
Website

Database Technology
& Programming
(DTP)



Add a
Database

Information Security
(INFS)



Secure
Code

Health Information
Technology
(HIT)



Make it
Accessible

- 

-

Rising above the Competition

-
- | Rank | Feature |
|------|------------------------------|
| 1 | User Independence |
| 2 | Zero Compromise |
| 3 | World-Class Customer Service |
| 4 | First of its Kind |

Changed Business Process



Changes to the Business Process

- Customer independence
 - User opens the Knowledge Base & answers a set of simple questions
 - Knowledge Base identifies the issue & provides steps to resolve
 - Hardware issues can be presented to caretakers so they can help with performing them
- Result - Eliminating the need to call LCT for support



Measuring Quantification

- Study how LCT will change with the Knowledge Base
- Make significant cuts to LCT's support cost
- Integrate add-ons & other products to showcase promotional sales & increase revenue
- Current estimate of 200 units sold annually
- Composite support labor rate of \$75/hr
 - Cost to the company
- Our Focus - Cut training & post-sale support costs



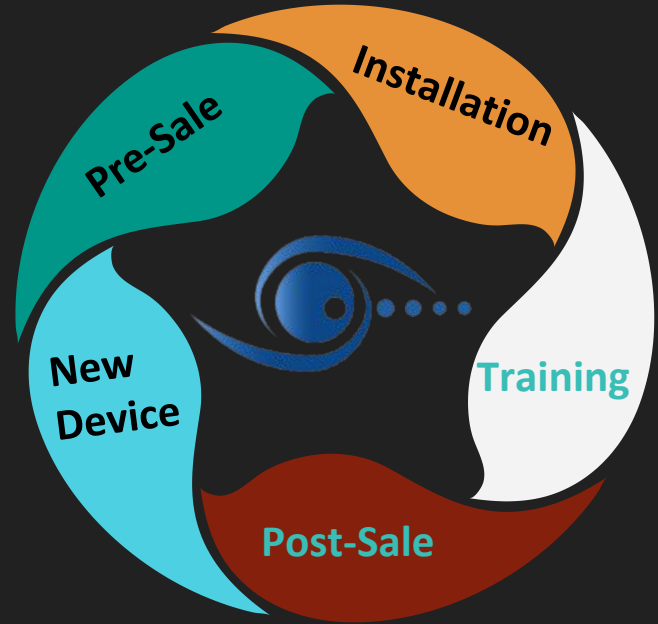
Distributors & Post-Sales

- Distributors are important because they help assure the user is going to invest in our client's device
 - Help with on site installation/training
 - Demonstrate use of device
 - Answer technical questions
 - Outline basic functions
- Post-sales support is provided by LCT representatives
 - Provide post-sale support throughout the system life cycle



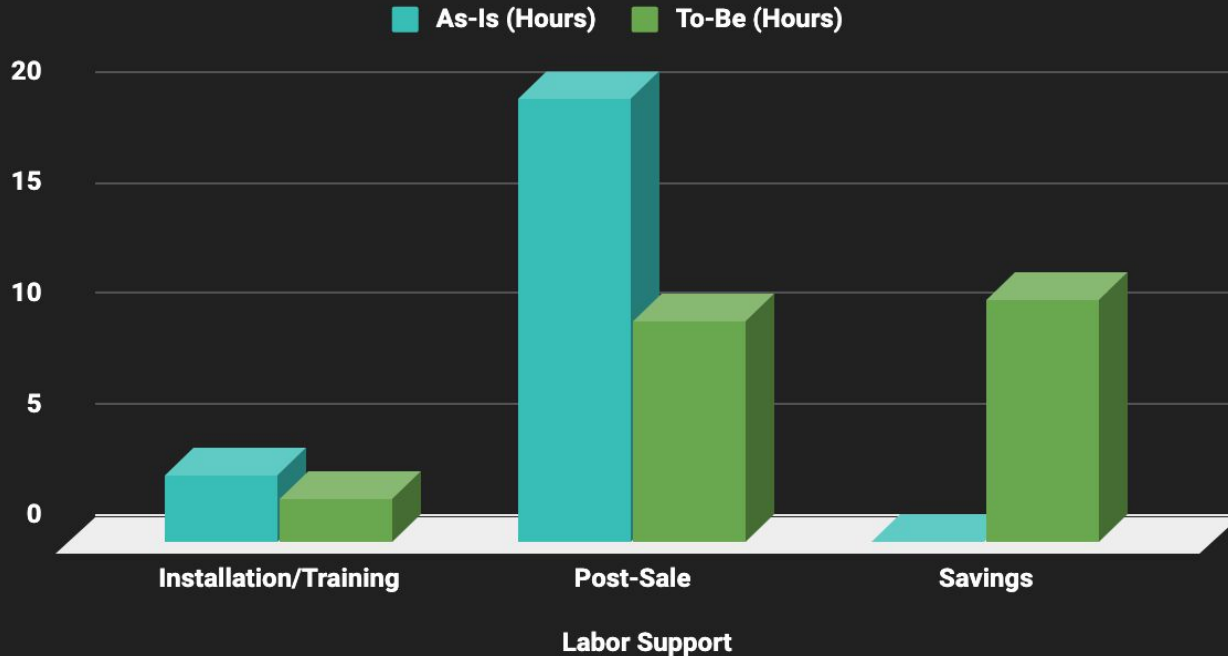
5 Year System Life Cycle

- Pre-sale Support
 - Inquiries, user testing & trial period
- Installation
 - Device setup, optimal placement, & mounting
- Training
 - Outline basic functions, practice calibration
- Post-Sale Support
 - All inquiries & issues following the training session up to 5 years
- New Device
 - Insurance covers a new device every 5 years



Projected Changes: Knowledge Base

Without Knowledge Base Project vs With Knowledge Base Project



- Implementing our knowledge base solution allows a cut in certain aspects of support & a major savings overall

As-Is vs To-Be

| Support Provided Per Eyegaze Edge System | As-Is | To-Be |
|---|---------------|-------------|
| Training/Installation Hours Training/Installation Cost | 3 \$225 | 2 \$150 |
| Post-Sale Support Hours Post-Sale Support Cost | 20 \$1,500 | 10 \$750 |
| Total Support Hours | 23 | 12 |
| Total Support Cost | \$1,750 | \$900 |

Return on Investment

- LCT sells 200 units annually
- As is
 - LCT spends \$345,000 on support for the 200 units sold annually in the life cycle
- With the Knowledge Base solution
 - LCT will spend \$180,000 on support for those 200 units sold
- Return on investment would be a savings of \$165,000 in the life cycle of the system
 - That's \$825 savings per system
 - 47% change from the current support system in the system life cycle



Solution Implementation Part 1



Formal Customer Acceptance

- System tested in a virtual environment
- System installed at Client site
- Client Sign Off Received
- Complete Project turnover on May 6
 - Documentation and training materials will be turned over to the client
 - Modifications, configurations, or system upgrades made to the Knowledge Base Resource



Implementation Challenges Addressed

Database debugging

Combined SQL Queries with PHP and HTML using the echo statement



Grid Interface compatibility

Removed user interface options that are native to chrome



Training

A user manual is provided on how to use the new system



Support Topics

Filled in the missing information

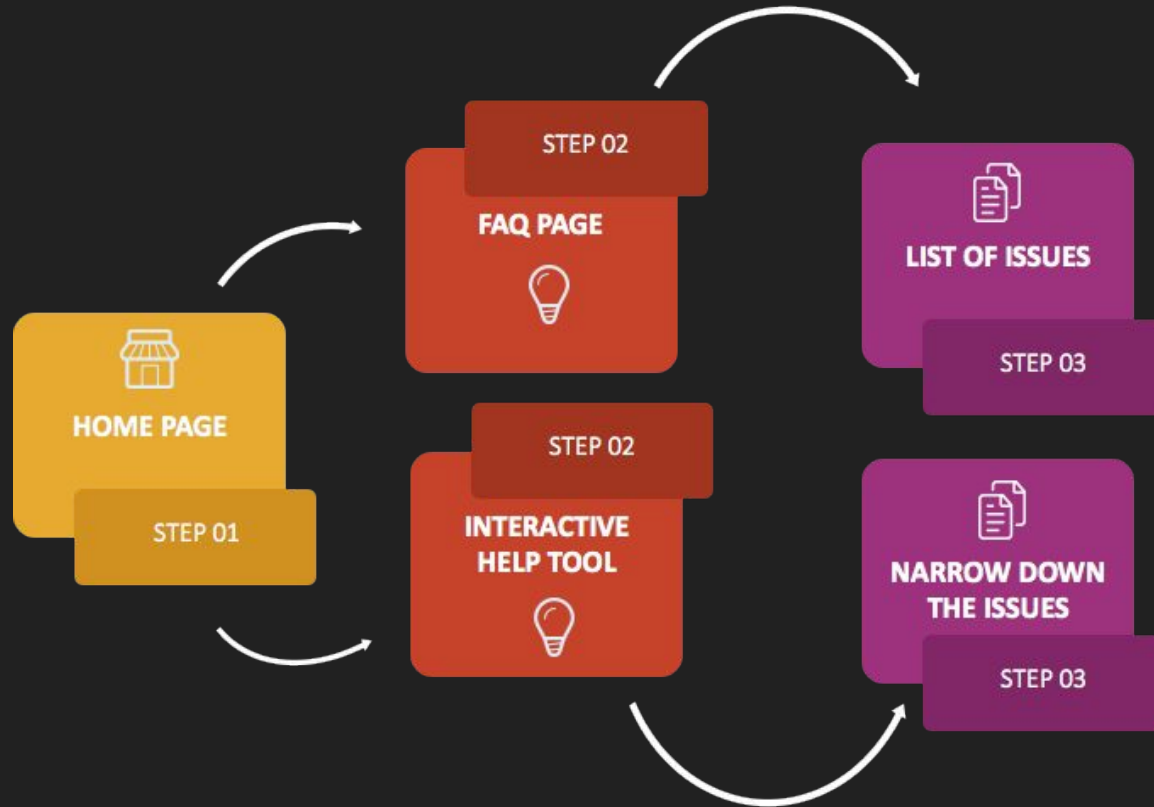


Design Documents

- Source Code
 - HTML, CSS, PHP, SQL Queries
- Template
 - How to enter information into the database

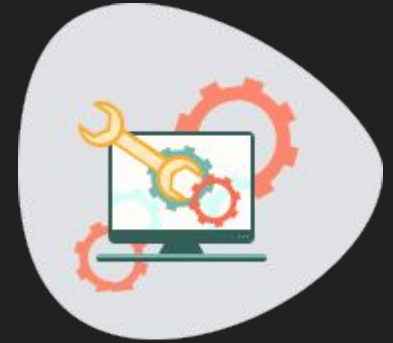


Diagram of Flow



Software/Hardware Configuration & Cost

- Software:
 - Implement on Windows operating system over the cloud, web or local network
 - Database: MariaDB
 - XAMPP
 - Local web server used for testing purpose
 - GitHub
 - Store and manage code
 - Used for sharing
 - Grid
 - Communication solution that enables the user to control their environment
- Hardware: None
- Cost: None



Maintenance Agreements

- Correct post launch errors of the knowledge base
- Provide support and assistance for database issues
- Update and maintain the database and server, as needed (up to one year)



Solution Implementation Part 2



User Groups

- LC Technologies Headquarter Employees
 - 10-15 employees
 - Work with technical end of the product
 - Classroom, Simulation, Interactive training
- Product distributors
 - Promote the product
 - Conduct demo for clients
 - Remote Training



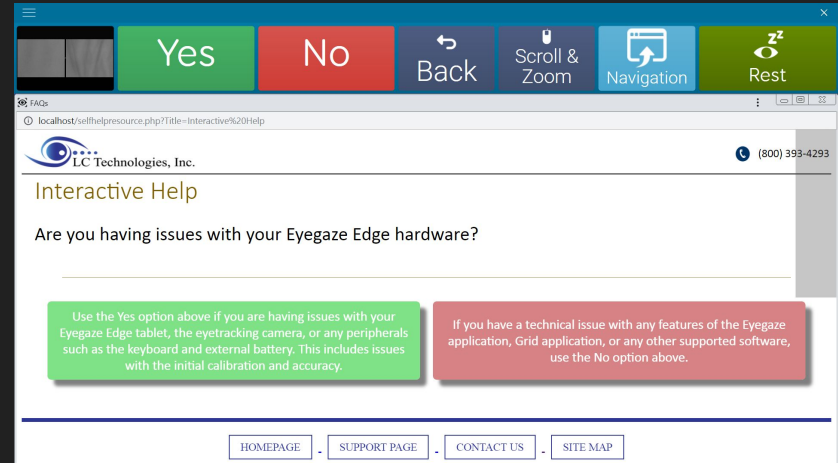
Best Training Methods

- Classroom setting
 - Presentation format
 - Demonstration
 - Demo on how Eyegaze works
 - Simulations/Interactive
 - Hands-On interaction with the devices
- Remote training
 - Training documents to distributors
 - Deploy EXE file
- Create Training Material
 - Video
 - PDF



General Topics To Be Covered

- Database
 - Logging into database/server
 - Updating the database
 - Updated at headquarters
 - Updated in real time
- Deployment
 - EXE file
 - Updates the grid set
 - Sent to employees, distributors, and patients
- User Interface and Navigation
 - Buttons on grid
 - Self-Help Resource & FAQ page

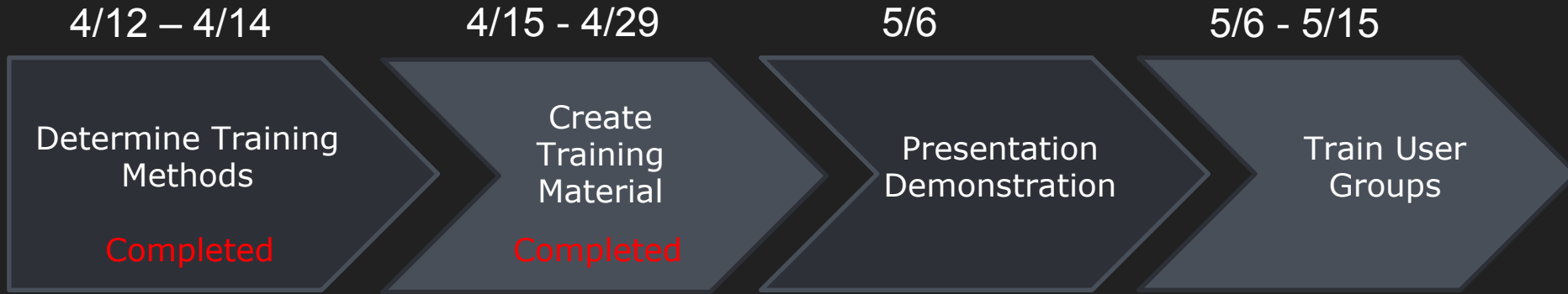


Who Conducts The Training?

- Grid and web page instructor:
Takin
- Database Instructor:
Ryan
- Remaining team members are
supporting staff
 - Navigating through new user
interface



Training Schedule



Solution Sustainment

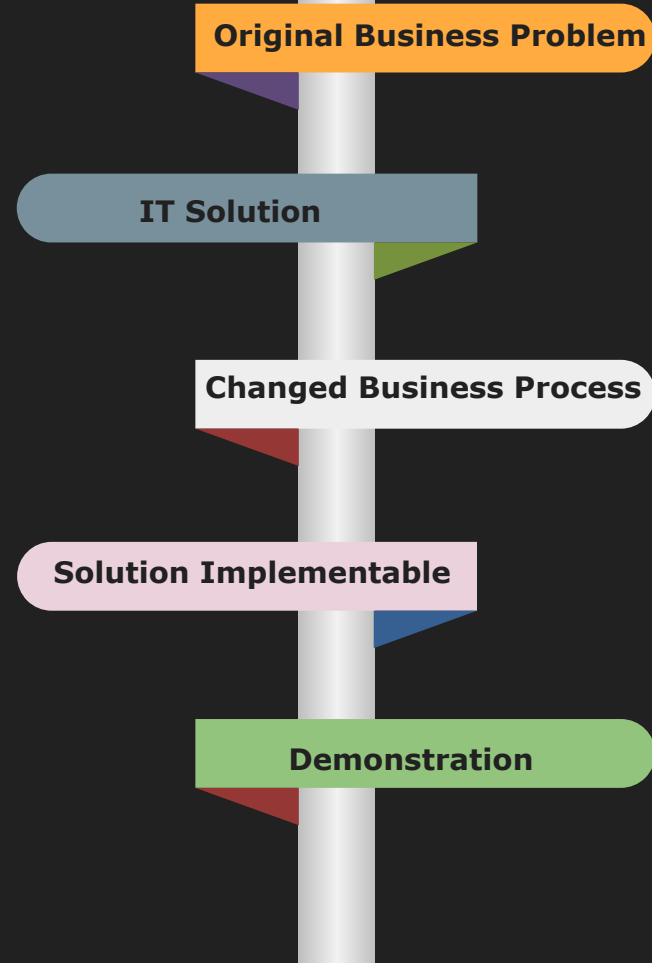
- User Guide and Training Manuals
 - How to use the new system
- Software used to implement the project
 - Information in database is easily updatable through a web application
- POC Information
 - LC Technologies Employees
 - Team Security





Go Live Demonstration

Conclusion





QUESTIONS?