Meeting Member's E-Commerce Demands

How to Make It Easy for Your Members to Do Business With Your Credit Union 24/7

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Julie J.C.H. Ryan
jjchryan@gwu.edu
First Principles

• What do your members really want?
  – 24/7/365 access to services
  – BUT!
  – Bunch of implied requirements
    • Transaction integrity
    • Data integrity
    • Non-repudiation
    • Availability
    • Confidentiality

• To be successful, they need confidence that…
  – the transaction performed is correct in every way
  – the transaction is not incorrect in any way
  – the service they think they are asking for is in fact the service that is provided
Challenges

• Present a worry free capability that is imbued with all the trust inherent in a conventional banking experience
  – What worries your customers is not always the same thing that worries your security engineers
  – Designing a security solution is complicated by the fact that you have absolutely no control whatsoever over the home computer environment

• Provide an intuitive interface that is:
  – Easy to learn
  – Easy to remember how to use
  – Easy to navigate
  – Easy to use
  – Useful

• Overcome fear of the unknown
  – Technology interface
  – Process elements
Security

• What is security?
  – Webster’s: (http://www.m-w.com/cgi-bin/dictionary Sept 24, 2001)
    • Pronunciation: si'-kyur-&#-tE
      – Function: noun
      – Inflected Form(s): plural -ties
      – Date: 15th century
    • 1 : the quality or state of being secure : as
      – a : freedom from danger : SAFETY
      – b : freedom from fear or anxiety
      – c : freedom from the prospect of being laid off <job security>
    • 2 a : something given, deposited, or pledged to make certain the fulfillment of an obligation
      – b : SURETY
    • 3 : an evidence of debt or of ownership (as a stock certificate or bond)
    • 4 a : something that secures : PROTECTION
      – b (1) : measures taken to guard against espionage or sabotage, crime, attack, or escape
      – (2) : an organization or department whose task is security
Information Security

- The practice of information security focuses on each of these elements in various means and applications
  - “the quality or state of being secure”
    - Assessing the risk posture of an environment, to include threats, vulnerabilities, and potential impacts
    - Auditing and monitoring the environment against attacks
  - “something given, deposited, or pledged to make certain the fulfillment of an obligation”
    - Access control and mediation; the principle of least privilege
  - “an evidence of debt or of ownership”
    - Identification and authentication, tokens, digital signatures
  - “something that secures: PROTECTION”
    - Focus on the security attributes of information assets and systems
      - Confidentiality, Integrity, Availability
    - Protecting these attributes with technical and management controls
To Simplify

• Providing security of information assets and systems
  – Cannot be done with technology alone
  – Requires on-going analysis and monitoring of the enterprise environment
  – Must be viewed as a composite of these elements:
    • The Risk inherent in the environment
      – Threats, Vulnerabilities, Impact Estimations, Countermeasures
    • Security attributes of the information assets
      – Confidentiality, Integrity, and Availability
    • Policy aspects of the protection framework
      – What needs to be protected? What doesn’t?
      – How much protection is needed? What’s overkill?
      – How long must the protection be kept in place? How soon can it be released?
    • The phasing of security activities
      – Protection
      – Detection
      – Reaction and Correction
A Word About Threats

• Threats:
  – Natural
    – Fire, Hurricane, Flood, Tornado, etc
  – Malicious
    • Requires both Capability and Intent
      – If no intent, won’t act
      – If no capability, can’t act
    • Capability
      – Requires both Access and KSA/Tools
        » If no Access, can’t act
        » If no KSA/Tools, can’t act or actions are limited

• This provides a structured way of controlling threat
  – Target intent as much as possible
  – Limit KSA/Tools as much as possible
  – Focus primary efforts on controlling access
    • Both quantity and quality
Security Solutions

• Security needs to be architected into an environment
  – Architectural approach implies all parts of enterprise environment are considered with regards to the desired solution space
    • Physical security
      – “guards, gates, locks” but also the entire practices of facilities security
    • Computer security
      – Secure computing approaches, configuration management, access control
    • Network security
      – Controlled and monitored networking connections, access control
    • Personnel security
      – Understanding who you are letting into your environment, access control
    • Operational security
      – Holistic security approach to operational environment, processes, procedures
  – Focus is to limit threat access, mitigate vulnerabilities, distribute impact, and manage risk
Worries, Part 1

• Your members don’t want to be exposed to insecurity
  – They don’t want to be afraid

• Security attributes of the data and the transactions
  – Confidentiality
    • Of the data
    • Of the transactions
  – Integrity
    • Of the data
    • Of the transactions
  – Availability
    • Of data
    • Of transactions
What is Most Important?

Percentages Comparison -- Training Question

Confidentiality

Integrity

Availability

Confidentiality

Availability

Chi Square P = 0.23

Chi Square P = 0.24

Chi Square P = 0.93

N = 47 with training
N = 60 without training
Worries, Part 2

• Adequate protections
  – For the confidentiality, integrity and availability
  – Of data and transactions
  – With limited resources

• The ability to fix things when they go wrong
  – The ability to detect when problems occur or security mechanisms fail
    • For problems that are protected against
    • For problems that are not protected against
    • For problems that were not considered or known about
    • For malicious activity that is stealthy in nature
  – The resources and capabilities to react and correct any problem situation that occurs
    • With adequate assurance that the reaction is correct
    • In a timely manner
    • With comprehensive solutions
Protect, Detect, Correct

Training Question Comparison -- PDC Numbers

Protect

Detect

Correct

No Trng Percent

Trng Percent

Chi Square P = 0.25

Chi Square P = 0.01

Chi Square P = 0.19

N = 47 with training
N = 60 without training
Solution to Worries

• Security managed through limitations on functionality
  – Can’t control home computing environment, so therefore must assume malicious end user activity
  – Limiting functionality constrains capabilities of attackers

• Identifying and authenticating end users problematic
  – Passwords are cheap and easy, but a problem waiting to happen
    • Compromised passwords, forgotten passwords, easy to guess passwords
    • How many passwords do you have to how many systems?
  – Consider using a one-time password solution
    • May seem more costly, but life-cycle costs may actually be less depending on the size and complexity of the user population

• Continually reinforce the message of security to your user population
  – Make sure you’re doing it right
  – Take away the concerns of your members
The Interface Issue

• Overly complex systems are a barrier to use
  – Human-computer interaction design principles can assist
  – Should be integrated tightly with security engineering goals

• Consider the ATM
  – Extremely limited functionality with narrow range of choices….
  – Anyone ever get confused over which choice to pick?
    • Which type of account?
    • Which account number?
  – Ever go to a different ATM than you normally use and get confused because the interface is different?

• Providing an interface that is easily interpreted, easily manipulated, and easily navigated is absolutely critical
  – For all ages, for all cultures, for all educational backgrounds
  – Colors, symbols, size, font types, etc all have emotional meaning
HCI Engineering

• Interface should have these qualities
  – Easy to learn
  – Easy to remember how to use
  – Easy to navigate
  – Easy to use
  – Useful

• Consider using a metaphor in your interface design
  – Take a physical bank and reproduce it conceptually
  – Make sure you aren’t making assumptions about knowledge or expectations
    • Testing on real users helps identify shortcomings in this arena
  – Use “normal” technology interfaces if possible
    • Web-like interface stripped of extraneous capability and enabled by cryptography can provide a comfortable mental experience
  – Train your users by adopting elements of the interface in marketing, promotional, and communications materials
Fear of the Unknown

• Getting customers to adopt a new technology can be difficult
  – Especially if they are afraid of it and what it can do
    • Can they figure it out?
    • Can they use it successfully?
    • Can their accounts be hacked?
    • Can someone steal all their money?

• Integrating the capability into normal operations eases those fears by making the capability familiar
  – Treat it as normal, and very cool
  – Show full confidence in the security features
  – Provide easy to understand user guides
  – Make sure the home computer software installation is absolutely brainless
  – At first, have extra staff on hand to ease the transition
    • Help desk
    • On-site demonstration capabilities
The Bottom Line

• Making it easy for your members requires a lot of up-front engineering and design thought
  – Security engineering
  – Useability engineering
  – Normalization of capabilities

• If you do it right, it will be so easy as to be trivial
  – It will become an expected component that is noticeably by its absence

• If you do it wrong….  
  – Low adoption rate of the capability
    • ROI…..  
  – Your members will be unhappy
  – Potentially expose the credit union to more risk than necessary
Contact Information

Julie J.C.H. Ryan, D.Sc.
1776 G. Street NW #101
Washington DC, 20052
jjchryan@gwu.edu
http://www.seas.gwu.edu/~infosec/

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