Usable Cutting-Edge IT Solutions

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Acknowledgements

- Collaborators
  - Jim Marsden, University of Connecticut
  - Paulo Goes, University of Connecticut
  - Terri Albert, University of Hartford

- Manage Loyalty
  - Sunil Sharma, CEO
  - Nihar Nanda, Director of Marketing
Outline

- Preamble
- Value Matrix
- Case Studies
  - Digital Signature
  - Web Design for Non Transactional Sites
    - GIST a Value Driven Continuous Design Process
  - Loyalty Application
What’s Usable Technology

- Not an antonym for Unusable Technology
- Instead, technology with following characteristics:
  - Creating Benefits Beyond Expectation
  - Acceptance not even an issue
  - Learning in natural environments/circumstances
    - With minimal effort

*In these tough economic climates only the solutions that are usable survive* – Anonymous Executive
Observations

- In the last 2 years, IT initiatives
  - Are business process driven
    - Internal digitization of traditional processes
    - Back office solutions
    - Component oriented
    - B2B or B2G
      - Constraint driven
  - Any significant changes in traditional business processes leads to unacceptability
A Value Framework

Process Change

Value Matrix

<table>
<thead>
<tr>
<th>Marginal Benefits</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Most Preferred</td>
<td>Highly Usable</td>
</tr>
<tr>
<td>High</td>
<td>Questionable</td>
<td>Usability</td>
</tr>
<tr>
<td>Low</td>
<td>Usable</td>
<td>May be</td>
</tr>
</tbody>
</table>
This Talk

Process Change

Value Matrix

Marginal Benefits

Loyalty Application Example

Many Studies

Case Study

Case Study
The Company

- GE Corporate Financial Services
- Commercial Financing
  - $2 M loans
  - Customer Revenue > $10 M
  - $28 billion company
- Good IT infrastructure
  - VAN access
  - Single sign-on
  - Web-based Document Repositories
  - Web-based Collaborative Environment
The Charge

“Can we use digital signatures for deal making process?”

- Document management in the long run
What’s a Digital Signature

- A method or process in which an electronic record and/or e-signature is encrypted and authenticated by a third-party certification authority ("CA"). The CA issues a digital "certificate" that:
  - Identifies and authenticates the sender
  - Ensures message integrity -- unaltered
  - Enables confidentiality -- encrypted
  - Ensures non-repudiation -- “it wasn’t me …”
Digital Signatures: The Basis
Digital Signature: Process

- Digital signatures is encryption in reverse.
  - In essence, the recipient looks up the public key of the sender and uses it to determine the authenticity of the sender and integrity of the data transmitted.
  - To sign a message, Alice does a computation using her private key and the message itself. The output is a digital signature and is attached to the message.
  - To verify the signature, Bob does a computation using the message, the purported signature, and Alice's public key. If the result is correct according to a prescribed mathematical relation, the signature is genuine; otherwise, the signature is fraudulent, or someone may have tampered with the message.
The Uniform Electronic Transactions Act (UETA):
- Approved July 1999; enacted in 20+ states
- Applies to all transactions, with certain exceptions
- Electronic records and signatures satisfy writing and signature requirements

The Electronic Signatures in National and Global Commerce (E-SIGN) Act:
- Enacted June 30, 2000; effective October 1, 2000
- Applies to all transactions involving interstate and foreign commerce, with certain exceptions
- Preempts state law (except “clean” UETA)
Location dependent Communications. Primarily Fax based approval for distant communications

External Organization

Emails, Voice for discussion. Faxes for signed documents

Principal Contact

External Project Team

Analyst

Legal Representative

Upper Management

Internal Project Team

Deal Making Process
Case: Digital Signatures

Challenges

- Digital signatures are transactions oriented (one time use)
- Previous signature invalidated, if
  - Another person signs the document
    - Solution → Sign packages
  - Document repository with versioning is used
    - Solution → don’t use versioning
  - Different versions of “Microsoft Word” is used to save the file
    - Solution → Just sign don’t save
A Prototype

Download certificate (via IntraNet or InterNet)

Check out document

Verify Signatures already on it

Sign document

Check in document

Verify all signatures finally and lock down document

Certificate Server

File server

Signing process manager
Case: Digital Signatures

Proposed Solution

- IT representative creates a document flow diagram
  - Jim → John → Stacy → Mark → ...
  - Stacy can sign the file only after John signs it
  - If Mark changes the document, the process starts again from Jim

- Responsibility for highlighting changes on the individual making the change

- Accidental invalidation of signatures a problem
Case: Digital Signatures

Value Matrix

Process Change

<table>
<thead>
<tr>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Digital Signature &amp; Deal Making</td>
</tr>
</tbody>
</table>
Changing the Value Proposition

**Document Server**

- Request for Approval
- Signature Received with no Modifications
- Signature Received with Modification to X’s changes
- Signature Received with Modifications but not to X’s part
- Create and store document “diff”
- Identify the “critical” individuals
- Mark and store modified and unmodified documents

**Team Member X**

- Send Email
- Send Email with parsed changes
- Signatures are not invalidated unless explicitly desired by X
- Invalidate X’s signature
- Send Email with parsed changes
- Reissue request for signature

**Record Signature**

- Send Email
- Send Email with parsed changes
- Reissue request for signature

**Actions**

- Send Email
- Send Email with parsed changes
- Reissue request for signature
Conclusions

- Current tools and technology can only partially support document management and deal making application
- New concepts are needed
  - Partial document ownership
  - Soft signatures (initials)
  - Hard signatures
  - Context sensitive diffs
  - *Company and vendors are working on implementing these!*
- *Value Shift often occurs with new Fundamental Development and Vendor Cooperation*
Site Characteristics

- Originally designed for informational purposes
- Accessing untapped customers
- Basic Web server
- Log analysis → Web Trends
- In house
Case: Web Design & GIST

Initial Charge

- Too many hits
  - Who are these visitors?
  - What are they doing on our site?

Initial Solution

- Macros to import data in Access databases
- Customized queries to track customers
- Exit Analysis
  - Identification of segments

Benefit

- Approval for more sophisticated web design
Developing a Customer Centric Web Site

- Unknown audience
  - Who is the customer?
  - How do they behave on our site?
  - Can we provide specialized sites?
- Using IS life cycle approach
  - Long cycle (waterfall model)
  - Short cycle (RAD, prototyping)
  - Users are well known segments
  - Successful implementation hinges on adequate training of user base
- IS life cycle approach valid in this environment?
GIST – Filling a Gap

- Understanding the customer
- Applying advanced statistical, data mining, information technologies
- Use both demographics (firmographics) and online behavior data
- 4-step approach
Value Bubble

1. **Attract**
   - Search Engines
   - Affiliates Programs

2. **Engage**
   - Site registration
   - Lending literature

3. **Retain**
   - Contact Us Form

4. **Learn**

5. **Relate**
   - Gather
   - Infer
   - Segment
   - Track

Source: McKinsey & Company
GIST – Relationships with Supporting Marketing Frameworks

VALUE BUBBLE

Attract
Engage
Retain
Learn
Relate

Parsons, Zeisser and Waitman, 1998

1-to-1 Marketing
Peppers and Rogers, 1993

Micro-segmentation
Peltier and Schribrowsky, 1997

1-to-1 Marketing

Gather
Infer
Segment
Track

CRM

Identification
Differentiation
Customization

Customerization
Wind and Rangaswamy, 2001

E-Services Quality

Perceived Control: Security/Privacy, Personalization, Flexibility, Reliability

Perceived Convenience: Ease of navigation, Efficiency, Flexibility

Eleven Dimensions

Gap Analysis
Zeithmal, Parasuraman and Malhotra, 2000

Parsons, Zeisser and Waitman, 1998

1-to-1 Marketing
Case: Web Design & GIST

Customer Data + Behavior Data → GIST → Nanosegmentation-based Gap Analysis

Site Components = Content + Interactivity

Nanosegmentation-based Gap Analysis
Nanosegments

- Segmentation using both customer data and captured behavior
- Unit for gap analyses
- Unit for design of content and interactivity
- Small and focused, but not individualized
- Not necessarily non-overlapping
Case: Web Design & GI ST

Nanosegments

- **IT Requirements**
- **No differentiation**
- **Microsegment**
- **Nanosegment**

- **1:1 Personalization**
  - Product of the type of behavioral Information available from online activities
  - Right granularity for site design purposes

- Wed data Analysis
  - Understanding why, how, when, where…

Database Marketing
- Understanding why a Purchase is made

Degree of personalization / customization
Case: Web Design & GI ST

Customer

uses

Computer

performs

Visit

consists of

Path

is a component of

Web Site

sends request to

Click

sends request to

AS Request

sends request to

Web log files

OFF LINE

ON LINE

Customer DB

E-Leads

Transaction files

GATHER

Registered Customers

Software tool to perform log file analysis
The goal is to increase the quantity as well as the quality of leads generated through the website.
INFER Phase

- Is the site attracting the target audience?
  - Cluster analysis of closed deals
  - Cluster analysis of online leads

- Are the visitors doing the right things on the site?
  - Several behavior analyses allowed by clickstream data
Infer: Example (offline channel)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Processing</td>
<td>24%</td>
</tr>
<tr>
<td>Textiles, knit, hosiery</td>
<td>19%</td>
</tr>
<tr>
<td>Chemicals, Fertilizers, Pharmaceutical Preparations</td>
<td>14%</td>
</tr>
<tr>
<td>Paper Mills, Corrugated boxes, Coated paper</td>
<td>13%</td>
</tr>
<tr>
<td>Other, Misc.</td>
<td>30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What they need</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refinancing</td>
<td>37%</td>
</tr>
<tr>
<td>Acquisition</td>
<td>24%</td>
</tr>
<tr>
<td>Working Capital</td>
<td>7%</td>
</tr>
<tr>
<td>Growth Capital &amp; Securitization</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>32%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What we give them</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secured Revolver</td>
<td>68%</td>
</tr>
<tr>
<td>Others</td>
<td>32%</td>
</tr>
<tr>
<td>30-39 month term</td>
<td>60%</td>
</tr>
<tr>
<td>60-69 month term</td>
<td>19%</td>
</tr>
<tr>
<td>10-29 month term</td>
<td>13%</td>
</tr>
<tr>
<td>Others</td>
<td>8%</td>
</tr>
</tbody>
</table>
### INFER: Online

**Service Sector (169)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Capital</td>
<td>55%</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>15%</td>
</tr>
<tr>
<td>Growth Capital</td>
<td>14%</td>
</tr>
<tr>
<td>Refinancing</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
</tr>
<tr>
<td>Advisor</td>
<td>29%</td>
</tr>
<tr>
<td>Owner</td>
<td>29%</td>
</tr>
<tr>
<td>Manager</td>
<td>18%</td>
</tr>
<tr>
<td>CFO</td>
<td>17%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
</tr>
</tbody>
</table>

**Manufacturing Sector (206)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Capital</td>
<td>57%</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>16%</td>
</tr>
<tr>
<td>Refinancing</td>
<td>10%</td>
</tr>
<tr>
<td>Growth Capital</td>
<td>7%</td>
</tr>
<tr>
<td>Reorganization</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td>Advisor</td>
<td>32%</td>
</tr>
<tr>
<td>CFO</td>
<td>23%</td>
</tr>
<tr>
<td>Owner</td>
<td>21%</td>
</tr>
<tr>
<td>Manager</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
</tr>
</tbody>
</table>
Infer: Cluster Analysis

Conclusions

- Offline channel attracts more companies seeking *refinancing and acquisition financing*.
- Online channel attracts more companies seeking *working capital and acquisition financing*.
- Pattern, however, may indicate that ‘online’ group is composed of *less mature* companies than the ‘offline’ group.
Case: Web Design & GI ST

INFER: Digimine Funnel Analysis

Funnel


User Type: All

Date Range: By: Daily

Month Day Year: Mar 22 2001

Funnel: Contact Us

Funnel

<table>
<thead>
<tr>
<th>Funnel</th>
<th>Event</th>
<th>Total Users</th>
<th>Funnel Users</th>
<th>% of Level 1</th>
<th>% of Prev. Level</th>
<th>Drop Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Total Users</td>
<td>2,535</td>
<td>2,535</td>
<td>100.00%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Level 2</td>
<td>Contact Us</td>
<td>202</td>
<td>202</td>
<td>7.97%</td>
<td>7.97%</td>
<td>92.03%</td>
</tr>
<tr>
<td>Level 3</td>
<td>Inquire About A Product or Service</td>
<td>134</td>
<td>85</td>
<td>3.35%</td>
<td>42.08%</td>
<td>57.92%</td>
</tr>
<tr>
<td>Level 4</td>
<td>Submit Inquiry</td>
<td>4</td>
<td>2</td>
<td>0.08%</td>
<td>2.35%</td>
<td>97.65%</td>
</tr>
<tr>
<td>Level 5</td>
<td>Thank You</td>
<td>9</td>
<td>1</td>
<td>0.04%</td>
<td>50.00%</td>
<td>50.00%</td>
</tr>
</tbody>
</table>

Funnel Messages

There are no messages to view for this report.
INFER: Digimine Category Affinity Analysis

Case: Web Design & GIST

Category Affinity

Go4f Reports available from 4/1/2001 to 4/21/2001

User Type: All  Date Range: By: Weekly  Week: 4/15/2001 - 4/21/2001  Top: 10

Show only combinations containing at least 2 item(s).
Show only combinations containing this item: All

Total Unique Users for this time period - 901

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Unique Users</th>
<th>Combined as % of Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Center &gt; To Your Credit Newsletter</td>
<td>186</td>
<td>34.41%</td>
</tr>
<tr>
<td>Knowledge Center &gt; To Your Credit Newsletter &gt; Newsletter Page 2</td>
<td>64</td>
<td>100.00%</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Center &gt; Glossary / Common Commercial Finance Terms</td>
<td>131</td>
<td>30.33%</td>
</tr>
<tr>
<td>Knowledge Center &gt; FAQ / Get Your Questions Answered</td>
<td>69</td>
<td>44.94%</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Solutions &gt; Working Capital</td>
<td>115</td>
<td>26.95%</td>
</tr>
<tr>
<td>Customer Solutions &gt; Growth Capital</td>
<td>86</td>
<td>36.05%</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Nanosegmentation Process:
Combining firmographics with online behavior

Customized Content and interactivity

Service
- Loan now
- Loan in 2-6 mo

Retail
- Loan now
- Loan in 2-6 mo

Manufacturing
- Loan now
- Loan in 2-6 mo

Intermediaries

Nanosegmentation of financial services site
Case: Web Design & GI ST

Redesigning for Segments

SEGMENT

- Learn About CL
- Contact Us
- Contact Next
- Contact Submit
- Loan Process
- Contact Us
- Contact Next
- Contact Submit
- Find GE Solution
- Configurator
- Personalized HP
- Contact Us
- Contact Next
- Contact Submit
- Return HP
- Contact Us
- Contact Next
- Contact Submit

Contact Us
Contact Next
Contact Submit
Nanosegment Discovered:
Intermediaries

- Not initially targeted
- Repeat visitors over several months
- Checked off various industry types and loan requirements
- Visited various resource pages

- New *redesigned site component* for this nanosegment after extensive marketing analysis
Intermediary Identification & Segmentation Process

- Possibility of 3rd domain name given only to Intermediaries by originators
- Better tracking of intermediaries
- More comprehensive cookies possible through Broadvision
- URL referral link for banner ads and email campaign tracking

Incoming traffic

IF

New visitor

Repeat visitor

Check referral

 Associations email campaigns

Intermediary focused Environment w/ in GCFS

If error or misclassification has occurred you have a button to redirect the DB

General CF Site

COOKIES

INT YES?
Case: Web Design & GI ST

Track

- Define metrics
  - Aggregate, e.g.:
    - # qualified leads
    - #closed deals
  - By nanosegment, e.g.:
    - #no visits
    - #qualified leads / nanosegment
- Continuous monitoring
GIST: Conclusions

- Step-by-step methodology for design and maintenance of web sites
- Aligned with market characteristics and customers’ intentions
- Use of customers characteristics and online behavior
- Nanosegment: “right” granularity
- **Value Shift often occurs with Goal Centric Design and Customized Development**
Ready-Made Value

- Usually Back-end systems
- Require Business Domain Experts
- Require Infrastructure/Technology Experts
- Niche Markets
- Small Software Companies
Company Intro

- Local
- ManageLoyalty
- Off Shore and US based Developers and Support
- Full Service Hosting and ASP provider
- Product
  - Dealer Incentive Systems
Example: Incentive Solutions

Product Characteristics

- Targeted incentive programs for dealer of all size
- No additional infrastructure or software management requirement for participants
- Lead time required to rollout an incentive program for dealers is small
- Assessment of Dealers level-of-interest and responsiveness towards various campaigns
- HO visibility into the regional incentive programs and collaborative approach to create incentive programs across geographical regions
- Accuracy of revenue forecasting through incentive programs
Dealer Incentive System: Functionality

Elements of Incentive Program

I. Strategy & Planning
II. Process Design
III. Program Structure
IV. Communication
V. Awards and Payouts
VI. Program Management
VII. Measurements
Example: Incentive Solutions

Business Process (I)

- **Strategy & Planning**
  - Establish the incentive program strategy, e.g.,
    - 10% increase in sales revenue by next year
    - Enroll all tier 1 and 2 dealers in the systems by 2nd quarter
    - Track and enroll all the top 5 sales agents for each tier 1 dealers by 3rd quarter
    - Cap the total cost of incentive programs at $1 Million
Business Process (II)

Process Design

- Define program stakeholders
- Define types of programs, geographical locations, time of offering, participation levels, accrual rules and reward levels
- Define product lines involved in the programs
- Define level of involvement for each stakeholders
- Define the program management
- Establish a budget for the programs
Business Process (III)

- Program Structure
  - Define who participates in the programs and how their participations are initiated (pre-loaded or enrollment)
  - Performance scoring models (Points, currency, etc.)
  - Tracking, reporting results, TA
    - System tracks all the essential elements of a program operations
    - Reporting of results
      - Performance by person enrolled in the program
      - Performance measurement of a program (earned incentives and spending of points)
      - Redemption reports by third-party fulfillment partners
  - Establish budgets for the programs
Business Process (IV)

Communications

- Define communication plans for the programs – all the communications supports on-line and off-line models
  - Pre-lunch
  - Lunch
  - On-going
  - End (results and acknowledgements)
Business Process: Payout and Measurements

V. Awards and Payout
- Accrual and redemption of rewards

VI. Program Management
- External program management
  - Review promotion participation and redemption reports
- Internal program management
  - Review reports indicating health of the programs

VII. Measurement
- Balanced score cards for key success factors established during Strategy and Planning
Why is This a Potentially Effective Solution?

- Existing Business Process (promotions and incentives)
  - Tremendously difficult to manage centrally
    - Cross comparisons are difficult
    - Effectiveness is hard to measure
    - Data incompatibilities abound
  - The system forces no change in application base
  - Only back end processes are involved
  - System creates data compatibility and facilitates many desired measurement functionalities.
Thank You!