Nirvana!
An Enlightened Survey Management System

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What is Nirvana?

An overarching control and case management system that supports RTI’s survey data collection activities.

- A centralized database that is the backbone for
  - Telephone (CATI)
  - Tracing
  - Self-Interviewing (Web) using RTI’s Hatteras
  - Field (CAPI)
  - General Control System - used for tracking hardcopy documents, bio-specimens, etc.
  - Adaptive Total Design (ATD) and other management reports
- A common portal, Symphony, for customized access
Background

- General Survey System Initiative (GSSI) was established to
  - Document the pain points experienced by survey managers, developers, programmers, and users
  - Look at the existing systems and processes
  - Evaluate COTS software for data collection
  - Consider process improvements
  - Develop solutions that address the issues and make RTI more efficient

- Several pain points related to separation of systems.
  - E.g., data movement between systems, reporting, agility, staffing
Key Components of RTI’s Systems for Surveys
Before Nirvana

- CATI Case Management System
- Control System Interface
- Tracing Case Management System

- CATI Data
- Control System Data
- Tracing Data

- Reports
Key Components of RTI’s Systems for Surveys

Nirvana version

- Sample information
- Subject and Contact Info
- Reports
- Symphony
- Mail/Email Out and Document Receipt
- CATI Case Management System
- CAPI Case Management System
- Tracing Management System
- Integrated Case Info and History
- Standardized Event and Status
- QUEST Control Data
- Instrument (Self, CATI, CAPI, or DE)
- Adaptive Total Design
Architecture – Behind the Scenes

- Centralized Consolidated Database structure
  - Define a case, subject, contact-info in a uniform manner
  - Define a single table for case history (record of calls, record of events) across all modes and all modules
  - Define a standard set of event and status codes across all modules; Implement the concept of “stages” (processes)
  - Regardless of the mode of data collection, each project will have a single database that contain all of the case/sample management information
- An Admin database provides the links to the project specific database
Architecture – User View

Symphony application portal:

- Dashboard for launching the Nirvana modules
  - Tools to define and administer Nirvana for the project
  - Traditional control system applications like Mailout, Receipt control, etc.
  - Other applications such as Tracing CMS, Sample Loader
  - CaseTools to view case data and status, help desk
- One-click install technology to provide automatic updates of the software
- Enforcement of project specific access based on windows login
Symphony - Portal

- **Study Number One**: 999.999.9999
- **Another Study**

- **Playground**: 000.000.0000
  - Provides a safe playground for users to try applications

**Your Applications**

- **EmailOut v1.4**: Allows you to create email merge documents
- **Nirvana Configuration v1.2**: Configures Nirvana
- **HTD**: Hit The Door
- **CaseTools**: Provides a means to lookup case information
- **Batch Tracing**: Performs Batch tracing operations with stored procs and files
- **MailReturn v1.2**: Provides mailreturn...
Project, Stages, Status, and Events

- **Project:** the definition of a study
  - contains one or more stages

- **Stages:** major steps in work flow that need to be tracked
  - always has a single current status that can be reported.
  - statuses from multiple stages can be rolled up into an overall case-status
  - can be simple or complex (lead letter mailout, CATI)
  - can be sequential or concurrent (forms receipt & field DC)
  - Stages are linked together by *triggers*. Triggers are rules that cause a change in the status of a case, either within a stage or in a different stage
Status: current state of a case within a stage
- derived based on a new event and the prior status
- can be affected by other flags or counters (e.g. too many calls)

Event: something that happens to a case
- can be a system event or one recorded by a user
- may or may not cause a change in the status

Nirvana defines a standard set of events and statuses.
Nirvana offers template stages and triggers.
All can be customized to suit project needs.
Mail/Email Out & Doc Receipt

- Traditional control system functions are standardized
- Modules are launched through Symphony and thus access controls are built-in
- Protocol regarding Mailout, etc., are controlled using Stage/Status/Event concept
RTI’s CATI-CMS has been adapted to use the Nirvana data structure.

Event based triggers make the case available for CATI. For example,

- As soon as new information is available from tracing, the case is automatically available to be worked in CATI.

- Initiating the transfer of a case from CATI to CAPI requires only a status code change.

- Standard CATI reports are generated directly off the project database.
IFMS / CAPI Case Management System

- RTI’s IFMS has been adapted to the Nirvana structure
- Case can be transferred to IFMS through status codes
- Status and data interchange happen on the project database itself
- Standard IFMS reports are generated directly off the project database
Tracing Management System

- Case is ready for tracing based on triggers from other modules (CATI, CAPI, etc.)
- Tracers can access all of the study information and case history from all modes of data collection
- Outcome based steps help streamline the tracing process
- Standard Tracing reports are generated directly off the project database
Instrument / Hatteras

- Hatteras – Survey Editor is used to author instruments in
  - Hatteras (web based Survey Engine)
  - Blaise
  - Adobe AIR Mobile for Handhelds (in progress)

- Hatteras Survey Engine administration modes include
  - Web (self-interview)
  - CATI
  - CAPI
  - Data Entry (with key verification)

- Hatteras supports
  - Linear or non-linear data entry
  - CARI
Quality Evaluation System (QUEST)

- RTI’s QUEST is used to:
  - Review CARI files for CATI and CAPI projects in a standard and objective manner
  - Authenticate interviews
  - Provide feedback to interviewers
  - Provide a richer quality control report by combining the review results with other information such as interviewer demographics, item non-response, etc.
Reports

- Traditional CATI, TOPS, and other reports are available and generated off the project database itself
- Stage specific reports are available
- A few Integrated reports are available but more are being developed as project needs are better understood
- Adaptive Total Design (ATD) Reports have been prototyped and working on standardizing the same
Benefits

- All interviewing activities are based on and updated in the same database, including case management data
  - All events/calls in a single place regardless of mode
  - All Paradata in the same database
- Comprehensive reports across all modes can be created more easily
- Responsiveness & Efficiency
  - “Moving” cases between Tracing and CATI, CATI and Field, or Field and Tracing will be relatively immediate and in the hands of survey management
  - Ex: hostile refusal from R -> all modes know without delay (relatively speaking)
Benefits

- **Quality**
  - Easier data management, less reconciliation
  - Can compare across studies that help us improve our processes
    - How many calls are needed on average for this population?
    - Was batch tracing effective for this population?

- **Standardized but customizable software and procedures**
  - Software maintenance costs are reduced
  - Personnel training costs are reduced
  - Customizable by project but within a controlled framework
Nirvana Core Team

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