Understanding the Implications of Project Fusion on the Oracle NLS Option

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Assumptions/Scope/Disclaimer

- Scope: Covering only OC 4.5.1 NLS capability which exists today
- Assumption: audience is familiar with the OC NLS option and its basic functionality
- Disclaimer: Any comments on the future direction of NLS OLS and are the opinions and guesses of DBMS Consulting, and are not based on any written or verbal statements from Oracle itself, and should not be construed as any statement of direction or fact from Oracle itself.

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Background and Approach

- With the acquisition of Peoplesoft and Siebel by Oracle within the last two years, Oracle must internally reorganize and look for common integration areas amongst these applications to reduce costs and provide "best-of-breed" applications to its global customer base
- Both Peoplesoft and Siebel and Oracle's own Apps 11i have been used globally in several countries and languages for many years
- Given the internal organizational alignment within Oracle of OLS to include the eClinical product suite, it may be possible to look forward at the possible future directions of the OLS NLS option by comparing the NLS capability of Apps 11i and Oracle (formerly Siebel) eClinical.

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Primary Functions of the OC NLS Option

- From the Oracle Clinical 4.5.1 NLS Users Guide, pp 1-1 to 1-2, the OC NLS option allows users to:
  - Manually translate (enter local language translations for) numerous global language objects.
  - Copy local language translations for objects, saving time and ensuring translation consistency.
  - Create local language DCM layouts.
  - Enter or batch-load data in the local language.
  - Manage discrepancies in the local language.
  - Generate reports (discrepancy history, response history, and DCF reports) containing local language values.
  - Translate local language text data to English for analysis with non-NLS data.
  - Extract local language data for analysis.
  - Create Local Language Graphic Layouts and generate Local Language DCI Forms for performing NLS Data Entry using Oracle Remote Data Capture (RDC).

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How Is This OC NLS Functionality Made Possible?

- Each place in Oracle Clinical where a local language data is required, an _NLS column or _NLS table is added.
- There are checks and calls in the OC Data Capture API, dcapi.dll, which check for NLS enabled studies and populate/retrieve data accordingly
- There are checks and calls in the Data Entry user exits, rxcde1.dll, which check for NLS enabled studies and populate/retrieve data accordingly
- There are checks and calls in the Pro*C compiled server code for Batch Validation, RXCBVBVS, Batch Data Load, RXCBEBLT, and Data Extract view creation RXCDXBVB which check for NLS enabled studies and populate/retrieve data accordingly
- There are NLS specific forms for translation of data, local language specific study design for OC and RDC Classic and PDF Mode, data entry, and discrepancy management
- There are NLS specific reports such as Discrepancy History, Response History, DCFs for local language capability
- There is replication between Global Language/English and local language entered/loaded/managed data

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OC NLS Options and Methods of Implementation

OC NLS Function	Method of Implementation
1. Manually translate numerous global language objects.	Provide NLS-specific forms which also read/populate _NLS columns
2. Copy local language translations for objects.	Re-use of translations through DVGs and GLIB objects
3. Create local language DCM layouts.	Provide NLS-specific study design forms which also read/populate _NLS columns
4. Enter or batch-load data in the local language.	Provide NLS-specific Data entry forms, dcapi.dll and rxcde1.dll and modify RXCBEBLT to check and load multibyte data on an RDBMS using the specific local language OS
5. Manage discrepancies in the local language.	Provide NLS-specific discrepancy management forms and RXCBVBVS which also read/poplulate _NLS columns/tables
6. Generate reports containing local language values.	Provide NLS-specific reports which also read/populate _NLS columns
7. Translate local language text data to English for analysis with non-NLS data.	Allow option to move English single byte text automatically from value_text_NLS to value_text
8. Extract local language data for analysis.	Modify RXCDXBVB read/populate _NLS columns/tables and optionally produce multibyte data output on an RDBMS using the specific local language OS
9. Create Local Language Graphic Layouts and generate Local Language DCI Forms	Provide NLS-specific forms which also read/populate _NLS columns/tables for performing NLS Data Entry using RDC.

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NLS Supports Multiple Languages (other than Japanese)

- The Current NLS architecture has the capability of supporting local multiple languages would require more than one instance.
- Because of its design, it would not be difficult for OLS to support integration with other languages
- Some specific work may be required with the Pro*C components to enable them in other languages
- The database structure should remain the same and not require changes under UTF8
- The use of the Reference Codelists and Clinical Study States flags means that additional codelists could be added to start supporting other language-specific values

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Observations About Current NLS Capability in the current OLS model

1. The NLS option is an **option** for OC, it means that the English-based OC application must exist in order to develop a study which has components translated into the local language for local language use.
2. The ability to use translated data of one local language with English in a Global study can be accommodated in the master instance; this translation can happen without replication.
   - In the current OC NLS environment, to accommodate m local languages in addition to English requires m-1 instances at minimum.
3. Extracting data to SAS and Batch loading Data from ASCII files puts a local language dependency on the OS of the server
4. Providing translation capability puts a local language dependency on the OS of the Middle Tier

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What are Oracle Apps 11i NLS Capabilities?

- Apps 11i has an NLS Applications option (supports about 30 languages)
- Forms, Reports, and screens are translated to the various NLS languages available
- Country-specific localizations are available for functionality specific to a particular country, such as on particular forms

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How Does Apps 11i Meet These Capabilities Architecturally?

- On the $APPL_TOP filesystem, there are subdirectories under each of the application product forms/reports/html directories for various NLS languages
- The appropriate file is used based on NLS configuration settings
- A concept of a base language is established during the 11i installation. Most functionality will then default to this base language, but administrative tasks and internal code are still based on American English

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Observations on NLS Capability of Apps 11i

- Oracle Apps 11i does require an English base version before any another language can be used.
- NLS Apps is an option on Apps 11i.
- Apps 11i can support multiple languages simultaneously, not only English and another language.
- There is no replication required to meet English and non-English data reporting
- There is no local OS language dependency for NLS language batch loading and data output, only a characterset requirement for the OS.

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What are the NLS capabilities of Oracle eClinical ?

- Oracle (Siebel) 7 is available in 17 languages:
  - Chinese, Czech, English, Danish, Dutch, French, Finnish, German, Italian, Japanese, Korean, Portuguese, Spanish, Swedish, Hebrew, Arabic, Thai
- Localized release language packs which are language specific can be installed in a common environment
- Fully product capability in each local language

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How Does eClinical Meet These Capabilities Architecturally?

- A local variable (LANG<locale_code>) that is set in the Oracle Siebel environment setting file (e.g. siebenv.csh/siebenv.sh/siebel.ini) located in each language pack subdirectory
- A $LANG environment variable is set
- Also uses browser encoding
- Within the database, there are Multilingual List of Values (MLOV) which can be set

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Observations on NLS Capability of eClinical

- No English base version is required before another language is used, that is, no specific preference for English
- Multiple language packs allow the capability of installing and using different languages simultaneously.
- No replication is required to meet English and non-English data reporting.
- There is an OS dependency for a Windows Middle Tier for Syndicated Data Loading and Routing (eClinical and eMedical)

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Comparisons of NLS Capabilities of Oracle Clinical, Apps 11i and eClinical

Function	OC with NLS Option	Apps 11i	Oracle eClinical
1. Provide application functionality in another language	YES, but English is required for base study design	YES, but a base language of American English is recommended. All administration and maintenance in English	YES, everything can be in another language with no English dependency
2. Provide data input and data output in another language	YES, but Server OS must be in the local language	YES, OS can be in any language once OS is running a supported characterset	YES, OS can be in any language but Middle Tier must be in Windows
3. Provide capability of analysis of data in English and another language	YES, one local language can be accommodated in the master instance and m local languages in > addition to English requires m-1 instances at minimum.	YES, all multi-language data integrated, but must have some functionality performed in the base language	YES, all multi-language data seemlessly integrated between any two supported languages

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Overall Comments and Possible Future Directions

1. The NLS architecture of both Apps 11i and eClinical currently allow greater flexibility of language support than Oracle Clinical.
2. OC will eventually have more languages supported than Japanese. This can occur today in the current OLS NLS architecture.
3. The restrictions to have local language OS-dependent Servers and Middle Tiers will eventually be replaced with a condition for the OS to support the charactersets which are being used on that server.

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Overall Comments and Possible Future Directions

4. Replication requirements for performing English and non-English data analysis will eventually become obsolete to include smaller organizations which do not have the infrastructure and resources to support replication.
5. Single node NLS support, as well as single node support in general, will become a reality in order to reach smaller non-English speaking OLS customers more quickly.
6. Project Fusion will accelerate the pace at which these changes will occur within the next 3-5 years.

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Question and Answers

All follow-up questions, please contact:

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