"What Do I Need and Why?"

Recognizing Required Features For A Nutrient Analysis System

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The reason for needing a nutrient database is associated with the work that one wishes to accomplish. Thus, the required features for a system that utilizes a nutrient database depends on the specific tasks that one wishes to perform with a system. For instance, the tasks may range from analysis of dietary records or recipes to determination of the adequacy of food procurement for the delivery of nutritious meals in a nursing home. Automation of the diet record acquisition process, comparison of the nutrient intake with stipulated standards, and generation of nutrition education reports for a client are examples of other tasks that might be accomplished by a system. As enumerated on Figure 1, a wide variety of different tasks rely on a nutrient database as an aspect of the system. While the reliability and integrity of the nutrient database are paramount, appropriate systems features are essential to accomplish specific tasks.

Determine Tasks You Wish To Perform

- ❖ Dietary Record Analysis
- ❖ Menu Analysis
- ❖ Food Frequency Analysis
- ❖ Tailor Menus
- ❖ Monitor Food Procurement
- ❖ Client Interviews
- ❖ Food Production Support

Figure 1

Once the tasks are identified, the necessary functional requirements for a system can be defined. For example, if one wished to automate the diet record acquisition process, the software should have an interactive component that facilitates the interview with a client and the data coding process. As shown in Slide 2, the functional requirements for dietary record analysis might include: a nutrient database; a recipe database; interactive data entry; comparison with standards; meal, day, and weekly averages; and data export for statistical analysis.

After definition of the functional requirements for a system, the details of the specific features necessary for each functional requirement should be enumerated. On Slides 3 and 4, examples of software features are illustrated for two functional requirements. If a functional requirement were stated as "Comparison with standards", some of the alternative features might be comparison with one or several standards such as the RDA's, user specified standards or targets, child nutrition meal components, or the Dietary Guidelines for Americans; evaluation of intake against modified diet

Define Functional Requirements For a System

- ❖ Dietary Record Analysis
  - ● Nutrient Database
  - ● Recipe Database
  - ● Interactive Data Entry
  - ● Comparison with Standards
  - ● Meal, Day, and Weekly Averages
  - ● Data Export for Statistical Analysis

Figure 2

restrictions; or presentation of intake data in graphical displays. In the second example, some alternative features in a recipe database could include: yield factors, nutrient retention factors, ingredient weight as AP or EP amounts, refuse loss factor, link to nutrient database, or link to food inventory system.

In different systems, the same functional requirement may be addressed differently. An example of this is the strategy for coding recipes. In some systems, the amount of refuse associated with a food is not documented in the system because edible portion weights are entered for all foods. However, if one has the task of monitoring the food procurement records of a food service organization or will operate a food production system, that strategy is insufficient because there is no mechanism to convert the edible portion weights for yield adjusted recipes to the amount of food that must be purchased. In this example, the specific feature that would be needed would be either a yield factor that converts from EP to AP weights or documentation of the edible portion weight for some specified purchase weight. Similarly, the detailed features necessary for all functional requirements should be listed to ensure that an appropriate system is selected for a given setting.

The features identified by this process can be used to establish specifications for functional requirements. As illustrated on Slide 5, for dietary record analysis, the specifications for a software product might relate to the eating occasions required, number of foods per eating occasion, number of days per dietary record, number of clients per group, or subject identification codes. One needs this level of understanding of desired features prior to working with a system designer or seeking a system product in the software marketplace.

Comparison of the stated specifications with the features of a system design or the features of various products in the marketplace will help one to recognize if the required features are present. As shown on Slide 6, prioritizing desired features and establishing a checklist of features will facilitate the selection process. Sometimes the required features will not be available in vendor products, and one is forced to decide what features are essential and which can be eliminated. Also, budgetary constraints may preclude acquisition of a system which fully meets the specified features.

Even when the stated features are present in a system, the amount of time and effort that will be

Detail Specific Features For Each
Requirement

❖ Comparison with standards

● RDAs

● User Specified Standards

● Child Nutrition Meal
Components

● Dietary Guidelines for
Americans

● Modified Diet Restrictions

Figure 3

❖ Recipe Database

● Yield Factors

● Retention Factors

● Ingredient Weight as AP or EP
Amounts

● Refuse Loss Factor

● Link to Nutrient Database

● Link to Food Inventory System

Figure 4

required to use the system should be anticipated. The conceptual designs of systems differ; thus, the data organization and capture methods may differ even when the same feature is provided. As shown on Slide 7, two major considerations are data entry and database maintenance requirements.

Because data entry becomes the major cost of using a system,. one needs to project the workload associated with particular systems when making a selection decision. The costs associated with using a system might negate any cost savings anticipated from acquisition of a system with a low purchase price.
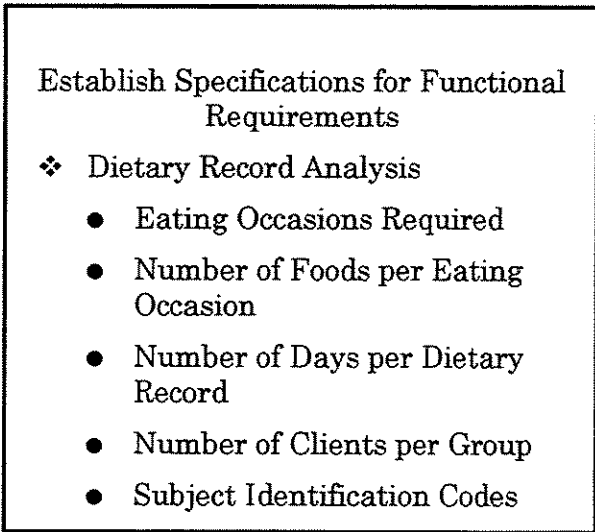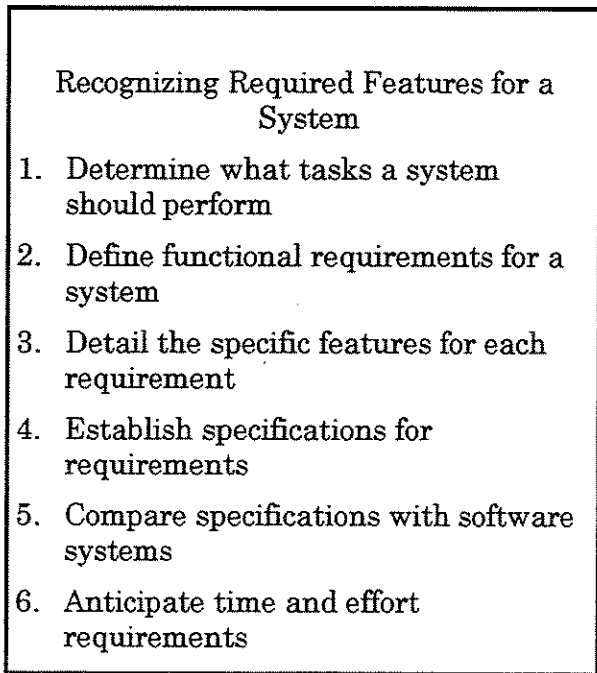
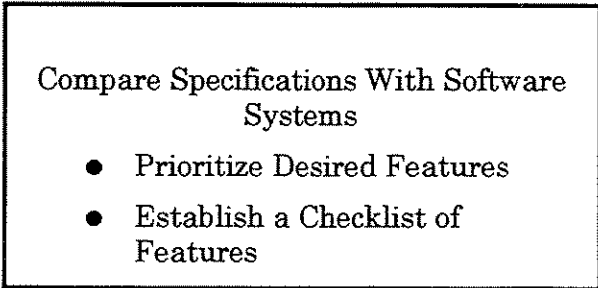In summary, acquiring a software system for use with a nutrient database is not a simple process. As listed on

Slide 8, recognizing the required features in a system can be facilitated by following a systematic process for designating and specifying aspects of a potential system.

Upon completion of this process, one should be in a good position to make an informed decision when selecting a nutrient analysis system.

Establish Specifications for Functional Requirements

❖ Dietary Record Analysis

- Eating Occasions Required
- Number of Foods per Eating Occasion
- Number of Days per Dietary Record
- Number of Clients per Group
- Subject Identification Codes

Figure 5

Compare Specifications With Software Systems

- Prioritize Desired Features
- Establish a Checklist of Features

Figure 6

Recognizing Required Features for a System

1. Determine what tasks a system should perform

2. Define functional requirements for a system

3. Detail the specific features for each requirement

4. Establish specifications for requirements

5. Compare specifications with software systems

6. Anticipate time and effort requirements

Figure 7