Case Study: Factors in Defining the Nurse Informatics Specialist Role

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ABSTRACT

Healthcare organizations, consultant groups, vendor companies, and academic institutions feel the challenge to enhance user experiences with information systems. To meet this challenge, organizations and companies are looking to better understand and utilize a variety of informatics roles to further marketing, business, or healthcare goals. Nursing is one practice area that can support the successful integration of information systems development, implementation, support, and user experience. However, the definition and development of such a role or position has met with mixed success.

This article explores some of the issues and influences related to the role's development. The issues, impacts, and influences have been identified based on healthcare business assessment, job description analysis, employment and project evaluations, and professional standards set by the American Nurses Association.

KEYWORDS

- Nursing informatics specialist
- Reporting structure
- Measures of success
- Strategic objectives
- Communication
- Role definition

This case study addresses the essential questions that need to be considered when looking to define or develop a nursing informatics specialist, or NIS, role in an organization or business setting.

Specific factors identified in the business and organizational arenas not only influence the requirements for establishing such a job role but also affect the potential success or failure of the positions. These factors include variety and type of work to be accomplished in the role; reporting structure for the position; business goals and strategic objectives influences; important alliances and essential communication; and measures of success and role evaluation.

Although this case study applies the above criteria to develop an NIS role within an organization, many of the criteria, influences, and measures of success can be applied...
to the development and success of a variety of informatics roles within healthcare, business, and educational organizations.

**Defining Work to be Done**

During the past decade, nurses and other clinicians have been active participants in defining informatics practices in healthcare organizations, vendor environments, educational institutions, and consulting firms. The informatics practice considerations are as dynamic as the technology healthcare policies and marketing trends identified role is working to support.

Informatics practices, especially in the clinical arenas, require the specialist to be familiar with and associate different bodies of knowledge, such as clinical need, technology aspects, systems lifecycle, budget and regulatory requirements, and market trends. The ability to integrate these bodies of knowledge together while recognizing organizational structure and strategic goals and adopting the systems lifecycle, while setting appropriate project priorities, ensure the success of the role.

The American Nurses Association has recognized the nursing informatics specialist role as a clinical practice that has proven its ability to support the many role requirements of an informatics practice. The NIS role, as defined by the American Nurses Association, facilitates the integration of data, information and knowledge to support patients, nurses and other providers in their decision-making in all roles and settings. This support is accomplished through the use of information structures, information processes and information technology.1

The clinical practice requirements for nursing encourage practitioners to develop skills important for informatics practices. The nursing process of assessment, problem identification and care planning with associated priority setting and evaluation, readies the nurse clinician to not only be early adopters but also to employ and adapt the systems lifecycle approach for delivering informatics projects. Project management—a vital skill in managing IT projects by establishing timelines, milestones, task dependencies, and resources—is easily grasped by clinicians who have worked in areas of care requiring constant priority setting and evaluation, such as emergency or critical care.

There are many different kinds of work and skill sets necessary to be successful in an informatics role. A sample listing of some of the expected skill sets include strategic planning, implementation planning and execution, analysis of data and workflow, project management, resource management, database management, education, research, software development, product marketing, and product sales.

The NIS specialist may be expected to achieve a level of expertise in any number of these skill sets to be successful in a given role. The development of the role is an ongoing joint responsibility of both the specialist and the organization. As the organization matures and better understands how to use an NIS role, expectations will be enhanced to better identify and achieve potential opportunities.

Specific NIS role job titles are evolving to meet organizational and business needs, but they are not necessarily reflecting or clarifying the work expected to be accomplished in a given role. Titles tend to be a reflection of individual organization or business unit needs or configuration; human resources position planning; position control requirements; and organization, department, or team reporting structures.

To better understand the variability in the titles associated with this role, a review of several types of NIS position postings and job descriptions was conducted in both a general Web search and reviews of targeted organizational and vendor Web sites. Most of the positions could be classified as administrative or management; project focused; product- or application-focused; process or workflow redesign focused; or other.

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Table 1 is a compiled summary of a variety of titles associated with an NIS practice, divided into those categories. The table is meant as a summary of sample titles and possible associated work. Notations reflect where the title might be commonly used, possible reporting structure for the position, and comments regarding the general type of work done.

**Department Reporting Defines Work**

Another factor to consider in both the development and definition of an NIS position is the reporting structure—whether it is an organizational, departmental, team, or business structure. The role and its direct reports may both define the work to be done and have a definitive impact on whether the role will be successful within the established structure. For example, consider the possible difference in an NIS role reporting to information systems or technical department vs. an NIS role reporting to a nursing or clinical department.

An NIS position reporting within an information systems or technical organizational structure requires the individual to be more projects-focused, necessitating the understanding of clinical system requirements, development specifications, knowing how to plan and execute implementations, applica-
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<table>
<thead>
<tr>
<th>Position Type</th>
<th>Title Examples</th>
<th>Report to</th>
<th>General Description</th>
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</thead>
<tbody>
<tr>
<td>Administrative / Management</td>
<td>Chief (Information Officer, Nursing Officer, Operations Officer, etc.)</td>
<td>Board of Directors or other Senior Management</td>
<td>Strategic and business objectives planning</td>
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<td>Director (Information Systems, Clinical Informatics, Nursing Informatics, etc.)</td>
<td>Chief level (CIO, COO, CNO)</td>
<td>Departmental or Product line focused on strategic and business planning</td>
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<tr>
<td>Manager (Information Services, Clinical Services, Product lines, etc.)</td>
<td>Information Services or Product line director</td>
<td>Departmental or Product line focused on strategic and business planning</td>
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<tr>
<td>Coordinator (Clinical Information systems, Information Systems, etc.)</td>
<td>Information Services or Product line director, or Clinical area</td>
<td>Focuses on the development upgrade or support of specific system(s)</td>
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<tr>
<td>Assistant Director for Clinical Informatics</td>
<td>IT or clinical or strategic</td>
<td>Participates in strategic initiatives and project acquisitions</td>
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<tr>
<td>Project Focused</td>
<td>Team Leader</td>
<td>Departmental Director or Manager or Project Manager</td>
<td>Responsible for supporting a team that is focused on a project or portion of a project</td>
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<td>Project Manager</td>
<td>Usually reports within IT or vendor structure</td>
<td>Manages and directs a project,</td>
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<tr>
<td>Clinical Analyst</td>
<td>May be IT, vendor and possibly clinical</td>
<td>Involved in workflow review and software requirements, and application development</td>
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<tr>
<td>Product / Application Focused</td>
<td>Developer</td>
<td>Vendor structure (primarily) IT technical</td>
<td>Programming or product development responsibilities</td>
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<tr>
<td>Analyst</td>
<td>Varies usually IT or technically focused in organizations or vendor environments</td>
<td>Involved in workflow review and software requirements, data management, and application development</td>
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<tr>
<td>Product Manager</td>
<td>Vendor structure usually but may be in an IT department</td>
<td>Manages the product specifications, development, marketing</td>
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<tr>
<td>Marketing Specialist</td>
<td>Vendor structure</td>
<td>Gathers user specifications and reviews product solutions to determine marketability</td>
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<tr>
<td>Clinical Applications Coordinator</td>
<td>Can report within IT or Clinical Department or Vendor product/business line</td>
<td>Supports a number of applications and projects</td>
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<tr>
<td>Programmer</td>
<td>IT, Technical division or Product development</td>
<td>Ability to code identified specifications for system development, enhancement or issue resolution</td>
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<tr>
<td>Database Manager</td>
<td>IT; departmental; vendor</td>
<td>Support data collection, storage, and reporting efforts</td>
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<tr>
<td>Consultant</td>
<td>Implementation services reporting to IT</td>
<td>Product focused needs such as system selection, project management for implementation or user training, system impact</td>
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<tr>
<td>Process Focused</td>
<td>CNS-Nursing Informatics</td>
<td>Clinical or vendor structure</td>
<td>Change management and work flow analysis, redesign</td>
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<tr>
<td>Informatics and Nursing Management Services</td>
<td>Clinical, IT or vendor structure</td>
<td>Manages process redesign with assigned departments, organizations, or business units</td>
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<tr>
<td>Consultant</td>
<td>Varied</td>
<td>Workflow analysis and reengineering recommendations</td>
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<tr>
<td>Other</td>
<td>Informaticist</td>
<td>Research Academic, IT or departmental</td>
<td>Identifies the data or technology to support an information exchange for a practice</td>
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<tr>
<td>Educator</td>
<td>Academic or clinical</td>
<td>Identifies curriculum, programs, and strategies to educate clinicians in informatics theory and applications</td>
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Table 1. Sample titles/roles reporting for the nursing informatics specialist.
balancing requirements and enhancement requests and new products against what is marketable to organizations and users. The NIS role in these environments will develop informatics skill sets that focus on analysis, development, marketing, and business planning.

Finally, many NIS roles are a part of project or product teams and have defined reporting structures to enhance the team's effectiveness. The role may be the project manager who oversees the tasks assigned to the team, or a team lead responsible for delivering the tasks, or an analyst that identifies what needs to be considered in development and planning for the team to be successful. Project charters define roles and team compositions, along with the expected project tasks and jobs of the team and the reporting structure for each of the team members.

Business Strategic Impact

NIS roles are not only composed of certain skill sets reporting within a defined structure; they are also shaped by specific business and strategic forces. Initially, an individual is hired with a desired skill set identified by a job description or a project team role. As the position moves forward, additional skills may be defined or required.

Any role or position requires the person to have a certain skill set to be successful. Those skills and role experiences can be related to past experiences or accomplishments, such as successful project implementations, workflow redesigns, product development and analysis work, or management background. New skill sets for roles also are defined, along with an education or development plan, reporting plan, support or team reports, and essential knowledge base. The maintenance of these is the responsibility of the employee. Typical business strategic impacts, as shown in Figure 1, include the following:

- Strategic vision and planning will be primarily expected of the administrative and management level positions, especially those in director or C-Level roles.

"NIS roles are not only composed of certain skill sets reporting within a defined structure; they are also shaped by specific business and strategic forces."

- Operational objectives that may be defined by the administrative and management roles such as director or C-Level will affect work that is done by teams, and other project-focused activity.
- Business objectives may be set or defined by the administrative and management roles, will affect the viability and funding for specific projects but also will shape the work of individual positions.
- Industry requirements will affect product management software design, as well as system selection and implementation projects.
- Project initiatives will define and shape team leader or project manager roles.
- Professional development at times involves work initiatives that include some consulting work in training and professional workshops. Generally, professional develop-
Building Alliances

A successful informatics practice requires the NIS specialist to develop and foster alliances in several different areas to successfully merge the various bodies of knowledge and institute the necessary change management, development, implementation, or workflow redesign to be successful.

Much of the work is accomplished using a team approach and by incorporating several members with different areas of expertise, such as developer, product manager, database manager, clinician, and others. Team alliances among the members are critical for the success of the project, whether it is a large implementation, an upgrade, or a new software product. Clear expectations for team members and project goals enhance relationships between team members and foster success for everyone.

“Regardless of reporting structure for the work that has to be accomplished, clear communication of expectations or the work accomplished is necessary to make the role successful.”

Networking among professionals is significant in informatics practice. Technology and its application are changing quickly, and regulations affecting healthcare initiatives are constantly evolving. Strategies for implementation, change management, system selection, and vendor or product evaluation continue to evolve and are tested by others. Networking, with the sharing of experiences and ideas, can be applied to many groups and approaches.

Administrative alliances are imperative for all levels, including project team leaders and system or product developers. These alliances ensure knowledge transfer and appreciation of strategic direction, budgeting issues, or sales opportunities. Without such information, appropriate monies and resources may not be allocated to support project and team efforts.

When developing alliances, it is important to recognize that communication and relationships can be formal or informal. Both are valuable in getting the job done, from getting the conference rooms reserved and resolving a network issue to getting board understanding and buy-in on a product, project, or direction. The formal alliances require the NIS to ensure communication regarding work being done and provide information as needed to support the organizational expectations. Informal alliances serve to provide information and workflows that are defined by the relationship as opposed to the organizational expectations. All can be accomplished either through actual team participation, project work, or informal “hallway” conversations.

Regardless of reporting structure for the work that has to be accomplished, clear communication of expectations or the work accomplished is necessary to make the role successful. Whether the NIS specialist is part of the project team or the CNO of an organization, clear and consistent communication will support an understanding of budget, system, training, and support requirements in getting the job done. Documented communication plans should be a part of any development or implementation team effort, with meeting minutes, memos, and other communications supporting understanding of informatics initiatives.

It is important to get information to the right people at the right time in the right place so they are hearing the right message.

Measures of Success

The NIS specialist measures success of a given role in several different ways. With a clear understanding of the work expected, an evaluation plan will not only justify and define a given position but also will enable the NIS to identify additional skills required to continue to meet organizational and strategic goals and directions.

For example, project-focused roles can be measured not only on the achievement of milestones and successful delivery of a project but also on the identification and effective communication of issues and steps taken for resolutions. Meeting timelines, effective management, and allocation of project resources, along with end-user satisfaction, contribute to the evaluation of the role’s effectiveness.

Product-focused roles face the challenge of being responsive to user input and market or product sales. Are the product release dates met with successful launches and customer satisfaction? Have the quarterly sales numbers been achieved, and does the product satisfy customer and industry requirements? Managing, developing, and supporting products or applications are success factors that are directly related to customer needs being met and end-user satisfaction, whether the end user is a clinician or an organization.

Administrative and management position effectiveness is measured in terms of the strategic goals established, the ability to meet the goals and create positive change. However, this role’s success elements are related to strategic endeavors that reflect increased or effective uses of technology to achieve identified strategic goals. Several examples of success measures include budget conservatism, resource allocation efficiencies, efficient workflow re-engineering resulting in employee satisfaction and increased
productivity, increased revenues or fiscal stability, or the introduction of new processes and technology.

Conclusions

The nursing information specialist role defined by the American Nurses Association is a result of evolving practice needs directly affected by technology. The role is based in a variety of organization and business settings and accomplishes several types of jobs requiring a number of skill sets in any given role, such as project management, application of systems lifecycle, resource management, and others. Reporting structures will vary for the positions depending on tasks or projects to be accomplished and organizational structure. To whom the position reports will have a two-fold effect on the role in defining the work to be done and possibly limiting the expansion of the role. An additional definer for the role is the organization’s business and strategic goals. The direction for IT development is defined by the business objectives of the organization and will affect not only the departmental level but also the project and team level.

Finally the position’s success will depend on developing strong alliances both internally and externally that can support role requirements and challenges. Networking exchanges enable learning from others’ experiences while remaining as up-to-date as possible on ever-changing technology, workflow improvements, creative project management, and resource planning.

The NIS role continues to drive successes within several business and healthcare environments. Merging the knowledge of healthcare, business, and technology is likely to improve patient-care experiences and the information exchanges that lead to quality care.

About the Author

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