A Star To Steer Her By:
Knowledge Management Strategy For NOAA's Hydrographic Community

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Business Case

The Organization

The National Oceanic and Atmospheric Administration (NOAA) bears the responsibility of charting the nation's 3.4 million square nautical miles of territorial waters. In order to do so, NOAA must efficiently acquire and process hydrographic survey data, ensuring its quality and providing it to mariners in a timely manner. NOAA's survey fleet consists of four hydrographic survey ships, seven mobile survey teams, numerous other survey and mapping vessels, and hundreds of people spread out across the country from Alaska to Florida, from Maine to Hawaii. Effective communication is key to the success of NOAA's nautical charting mission.

Project Description

NOAA's hydrographic community is geographically dispersed and fragmented, making it difficult for members to effectively communicate and collaborate with one another. This project considers the strategic importance of improving this situation and suggests a knowledge management strategy that aligns with the business needs of the organization.

Problem Statement

The current means and methods for knowledge creation, sharing, transfer and dissemination within NOAA's hydrographic community are inadequate and asynchronous with today's advancing technologies, preventing NOAA from fully realizing its capabilities with respect to its nautical charting mission.

Opportunity

NOAA is recognizing the importance of leveraging advances in technology to improve its nautical charting capabilities. The recent installation of high speed, 24/7 internet connections on its survey vessels is evidence of this shift. Additionally, the Office of Coast Survey (OCS) Data Streamlining initiative seeks

"To increase the capacity of the Office of Coast Survey to process hydrographic data and apply it to appropriate products, reducing the ping to chart time to 3 months."

OCS intends to facilitate this effort through various technological, process, and procedural changes, which presents a perfect opportunity to also improve the way in which NOAA's hydrographic community communicates and shares knowledge. Paramount to the success of such an initiative is developing and implementing a knowledge management strategy that identifies the key needs and issues within the organization and provides a framework for addressing them.

Goal

A hydrographic community that is adept at the identification, acquisition, development, sharing and distribution, utilization and retention of knowledge.

Objectives

- Grow a sense of community
- Reduce barriers to communication
- Increase operational efficiencies
- Create, share, transfer, and disseminate knowledge

Benefits

- Creates a common environment supportive of communication and collaboration
- Breaks down organizational silos
- Develops feelings of community regardless of location
- Supports success of the Data Streamlining initiative
- Centralizes disparate data into one system
- Standardizes Knowledge Architecture
- Increases operational efficiencies
- Encourages identification, acquisition, creation, sharing, transfer and dissemination of knowledge

Initiative Phases

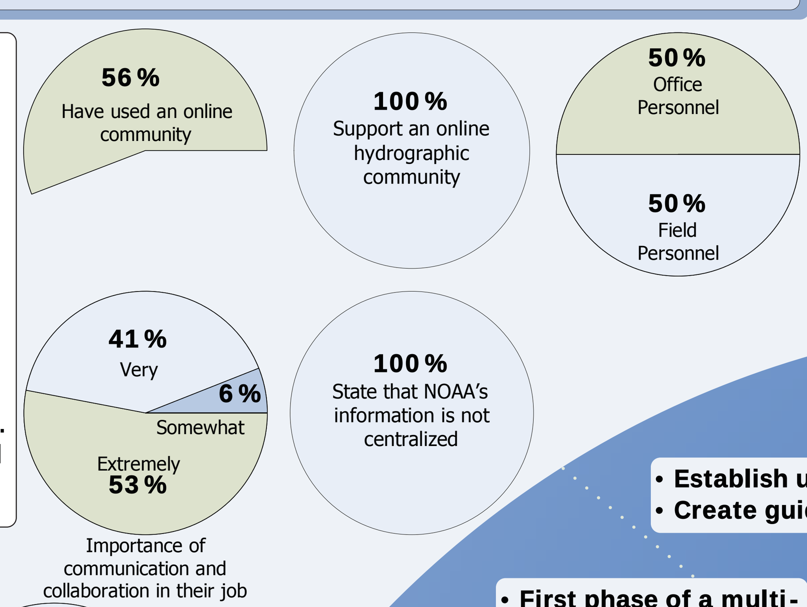
Current Phase	Next Steps		
Initiation	Investigation	Implementation	Operation
• Business Need • Preliminary Analysis • Solution Concept • Project Proposal • Approval	• Project Team Initiation • Detailed Research and Analysis • Alternatives Evaluation • Recommendation • Approval	• Implementation Team Initiation • Detailed Task Plan • Pilot Implementation • Rollout • Post Implementation Review	• Sustain • Evaluate • Optimize

End-User Survey – Selected Results

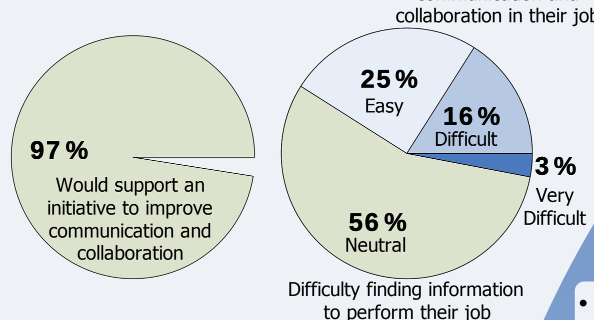
The Survey
- Online survey with 21 quantitative and qualitative questions
- Sample size = 32
- Population ≈ 75

Summary

Users want the benefits of a knowledge management system and strategy in order to assist with collaboration, communication, and learning. Concerns were raised around governance and adoption.



Importance of communication and collaboration in their job

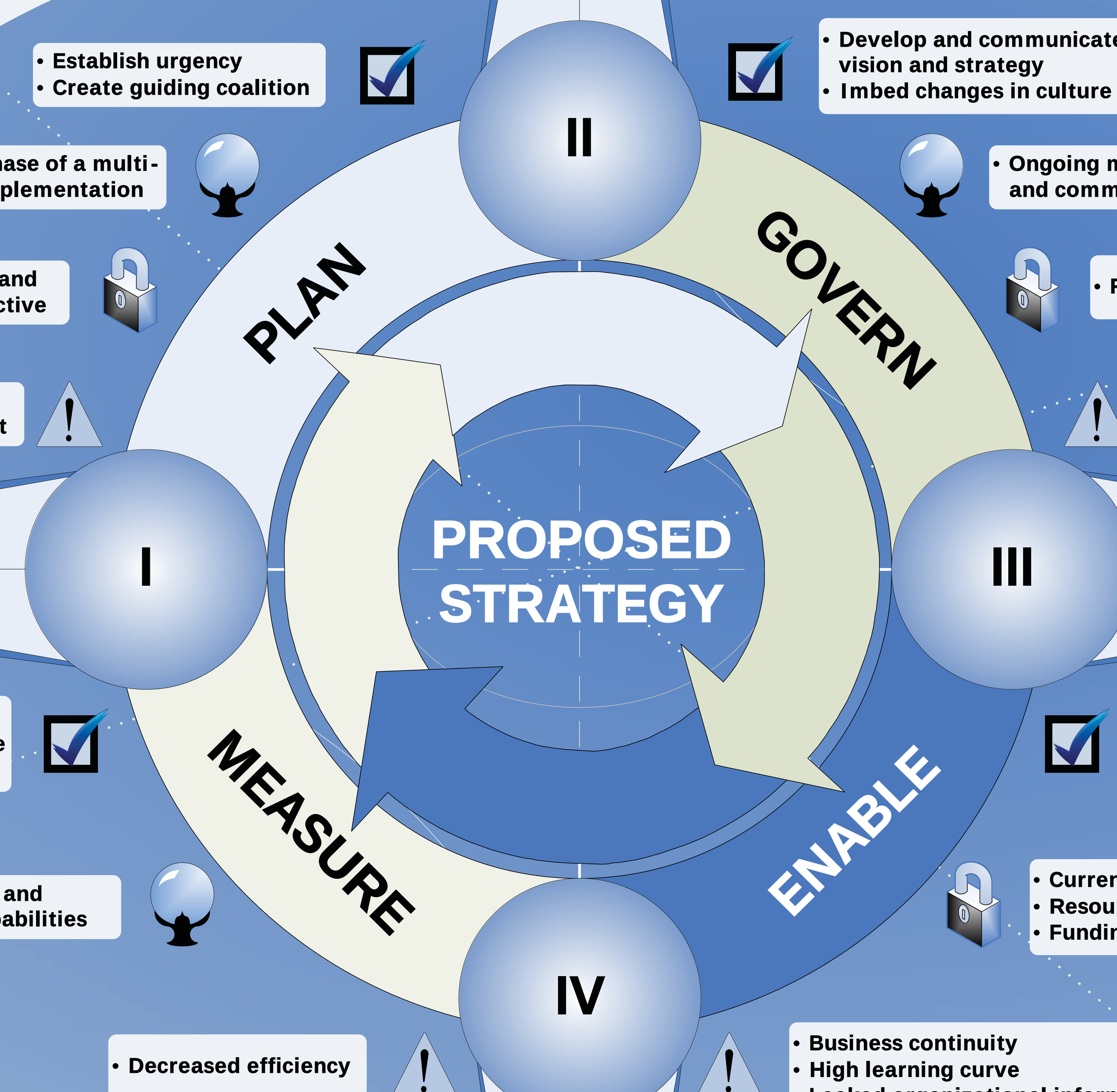


Difficulty finding information to perform their job

KEY

- Change Management
- Assumptions
- Constraints
- Risks

Proposed Strategy



I – PLAN / II
- Establish urgency
- Create guiding coalition
- First phase of a multi-part implementation
- Capital to achieve and maintain this objective
- Impact to Data Streamlining
- Increased operational budget

II – GOVERN / III
- Develop and communicate the vision and strategy
- Imbed changes in culture
- Ongoing management and community support
- Resource capacity
- Low adoption or participation
- Loss of key stakeholders
- Internal competition

III – ENABLE / IV
- Empower action
- Generate short-term wins
- Current IS architecture
- Resource capacity
- Funding
- Business continuity
- High learning curve
- Leaked organizational information

IV – MEASURE / I
- Conduct lessons learned
- Consolidate gains & produce more change
- System audit and reporting capabilities
- Decreased efficiency

Project Value Metrics

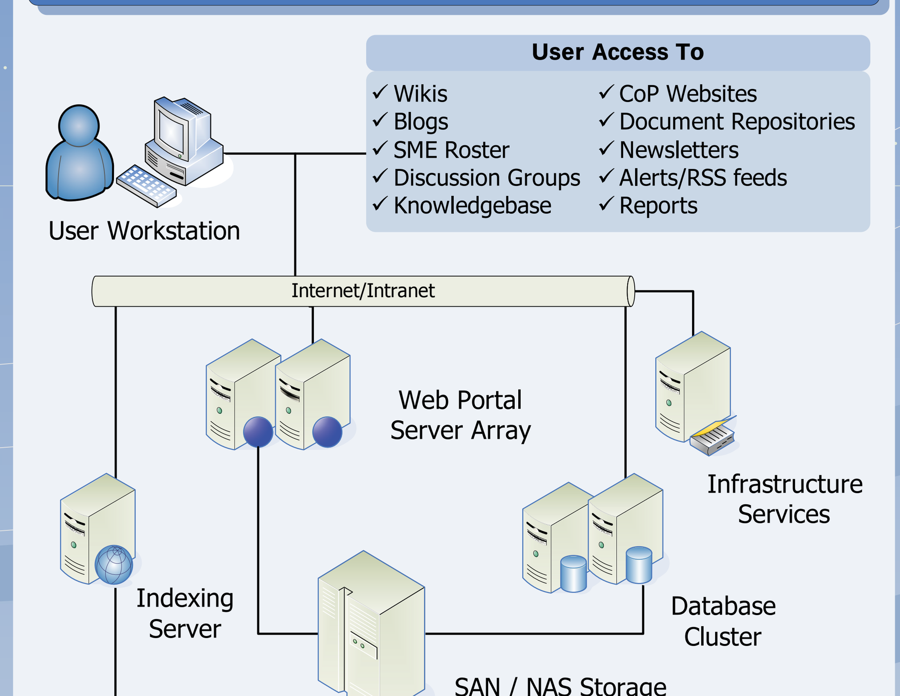
- Strategic Business Alignment
- Management Information Support
- IS Architecture Alignment
- Internal and External Risk
- Project Uncertainty

Measures are weighted and scored 0-5 to determine the value of the project relative to other efforts

Key Performance Indicators

KPIs	Definitions
Ping to Chart	Time from data acquisition to final product delivery
Site Usage	Number of unique page views
Sites Created	Number of websites, wikis, blogs, etc. created by users
Downloads	Number of content downloads
User Satisfaction	User satisfaction scores based on semi-annual survey results

Solution Concept



Stakeholder Governance

Data Governance Responsibility

Project Governance Responsibility	Low	High
High	**Management** Strategy Risk Mitigation Resource Allocation Financial Control	**Communities of Practice** Policies Standards Procedures
Low	**Individual Contributor** Content / Context	**Support Organization** Architecture Infrastructure Interface Security

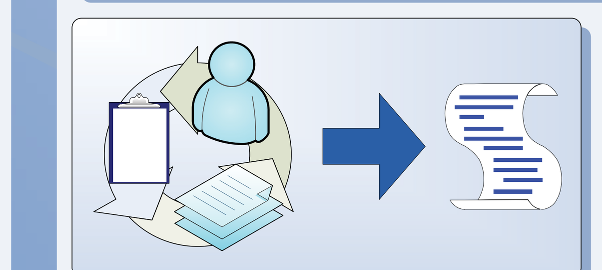
Stakeholders And Associated Responsibilities

Data Governance Ontology

FOLKSONOMY
- Community-organized taxonomy
- Makes a body of information increasingly easy to search over time
- Less expensive than controlled vocabularies
- Does not require experienced resources
- Much better than nothing

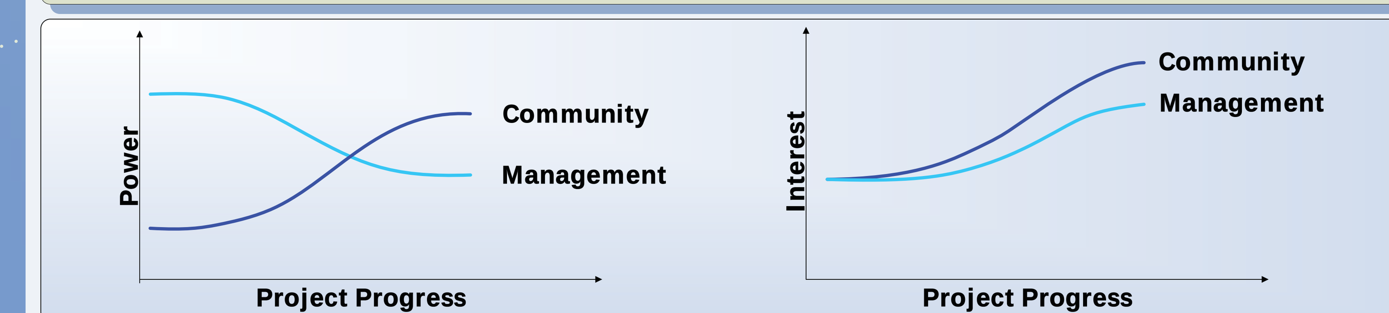
Suggested Ontology And Justifications

Information Policy Development



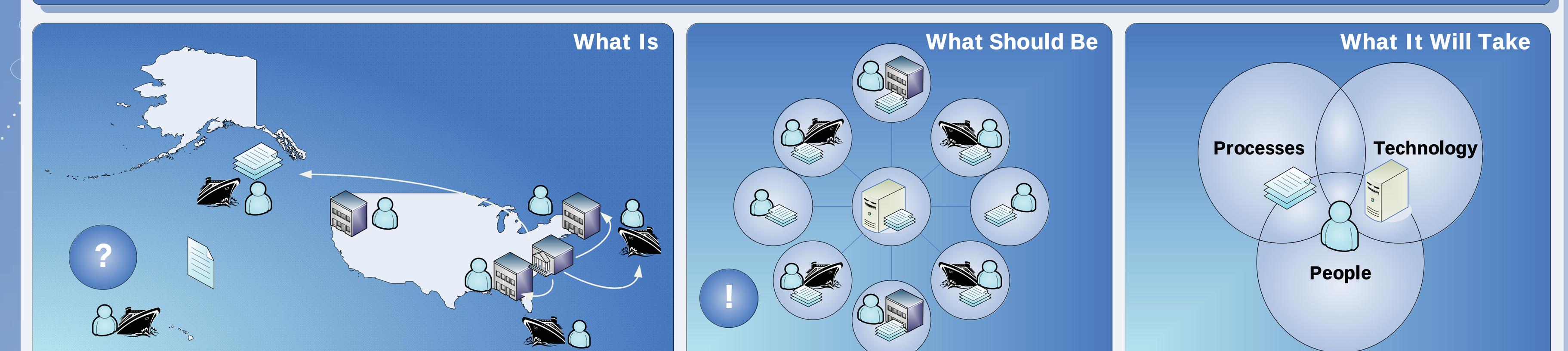
It is imperative that management establishes a formal, focused, and feasible information policy, based on a complete examination of the organization's needs and objectives. The policy should cover the principles of information use within the organization, particularly with regard to support of the knowledge management strategy.

Evolution of Primary Stakeholders



The primary stakeholders involved in the initiative are the Community and Management. In the beginning, Management holds significant power – they control the initiation and direction of the project. As time progresses; however, the Community gains power, ultimately determining the success of the effort. Interest in the project starts similarly for both groups, but as benefits are realized, the Community becomes more invested.

Enablement Roadmap



People and information are scattered, disconnected | Resources interconnected, accessible | Effective combination of key components

◄ Divergence — What is — Convergence ►	What Should Be	What It Will Take
Managers currently seeking solutions	Management understands importance of knowledge and information sharing within the hydrographic community and actively pursues means of improving capabilities	Management approval to continue into the investigation phase of the initiative and allocation of requisite resources
Confusion based on incongruity between sources of information	Clear communication of organizational goals, policies, requirements to all levels	A centralized communication vehicle to drive consistency and accuracy of information
Minimal ability to identify and locate Subject Matter Experts	Quick and easy identification of and access to Subject Matter Experts	The creation of a "Knowledge Roster" of SMEs and the means to reach them
Inadequate tools that only facilitate communication and do not capture information for later use	Capture of individuals' knowledge and integration into organizational knowledge base	The formation of a community to elicit information sharing and the necessary technology to capture the exchange of knowledge
Willingness exists but means must be provided	Individuals willing and able to actively share and communicate new and novel information	Empowering, motivating, and incentivizing employees to participate in the community
Collaboration is stifled with fractured groups relying on email or telephones to communicate	Seamless communication and collaboration among individuals and groups within the organization supported by technology	Online collaboration tools which embody the ease of email and the personal element of face-to-face communication
Large geographic disconnection as well as time-zone separation create communication difficulties	Access to all individuals within the organization, regardless of physical location	The needed infrastructure and technology to ensure 24/7 access to communication and collaboration technology
Documents, procedures, directives scattered throughout organization, within different local units, transmitted via email	Centralized repository of organizational information, documents, and procedures	An online knowledge base and supporting content management tools and methodologies
Searching for answers is not easy; information is scattered, stored in different repositories and formats	Ability to search through information sources and find relevant content quickly	Developing simple content standards (folksonomy, metadata, etc.) to enable easy content retrieval
Individuals and groups often work in isolation; some feelings of animosity between groups exist; differences in opinion fuel isolationist mentality	Create true feeling of community among all members of the organization	All of the above

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