

July 29, 2014

INFORMATIONAL ITEM

MEMORANDUM TO THE TRUSTEES

FROM THE PRESIDENT and CHIEF EXECUTIVE OFFICER

**SUBJECT: Strategic Initiative Business Plans –
Process Excellence and Knowledge Management**

SUMMARY

This memorandum provides an informational item to the Trustees on the Authority's Process Excellence Business Plan (Exhibit "A") and Knowledge Management Business Plan (Exhibit "B").

BACKGROUND

The Authority's 2014 - 2019 Strategic Plan ("Plan") was adopted at the March 25, 2014 Trustees' meeting. The Plan was developed around three key themes that reflect the transformative change taking place in the energy industry and economy. These themes – Customer Empowerment, Infrastructure Modernization and Resource Alignment – are composed of six specific and actionable initiatives. Two of the Resource Alignment initiatives – Process Excellence and Knowledge Management, are being presented in this item. With the implementation of these business plans, staff is strengthening the Authority's foundation while allowing for the flexibility needed to successfully adapt to the change required by the 2014-2019 Strategic Plan.

DISCUSSION

The Process Excellence initiative, through the creation of a new business function, will embed in the organization a culture of process excellence and continuous improvement that is focused on reducing costs, waste, and environmental impact, while assessing and balancing risk.

The Knowledge Management initiative recognizes that access to the right information and knowledge are critical to an organization's success and will ensure the identification, preservation and sharing of these resources; the establishment of an enterprise-wide search mechanism for electronic content; the categorization, organization and consolidation of key topics and areas of information; and the sharing of vital information through knowledge exchange mechanisms and knowledge capture tools.



STRATEGIC INITIATIVE BUSINESS PLAN for

Process Excellence

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Initiative Start	5/20/14
Initiative End	12/31/15

TABLE OF CONTENTS

- 3 EXECUTIVE SUMMARY**
A one-page overview containing key information about the initiative, including strategic rationale, marketing strategy, financial summary and high-level timeline
- 5 STRATEGIC RATIONALE**
A high-level summary of the strategic rationale of the initiative and how it aligns to the strategic goals and key values of NYPA.
- 7 INITIATIVE OVERVIEW**
A range of background and scene-setting information pertaining to the initiative, including why the initiative is being suggested and what it aims to achieve.
- 8 SOLUTION**
Key information around the proposed solution, including suggested business model and governance structure.
- 11 BENEFITS AND REVENUE**
Quantitative information around annual benefits expected as a result of the initiative. These benefits include cost savings and increased revenue. The section also includes a benefit realization overview.
- 13 FUNDING FOR THE INITIATIVE**
High-level specification of the intended funding sources that will be used to fund the implementation.
- 14 COSTS AND RESOURCES**
Quantitative information around annual cost and resources required to implement the initiative, as well as any permanent on-going costs that will be incurred as a result of implementing the initiative.
- 16 IMPACT TO MARKET**
A high-level market analysis, followed by details around how the initiative is expected to impact customers segments and NYPA's products and service offerings.
- 16 ORGANIZATIONAL IMPACT**
Overview of how the initiative is expected to impact NYPA's business units, including an overview of the skills required and whether those skills currently exist in the organization.
- 18 EXTERNAL STAKEHOLDER IMPACT AND MARKETING PLAN**
Overview of how the initiative is expected to impact NYPA's external stakeholders.
- 18 RISKS**
A high-level risk overview, specifying key risk information such as the probability and severity of key risks, risk owners and action plans.

EXECUTIVE SUMMARY

Strategic rationale and drivers of the initiative

The process excellence initiative will establish streamlined, sustainable processes that balance cost efficiencies alongside risk, and realign internal resources to support the transformation of NYPA described in the 2014-2019 Strategic Vision. These efficient and optimized processes will provide a foundation for the other strategic initiatives introduced as part of the 2014-2019 Strategic Vision.

NYPA, like any business, has evolved significantly over time. In some cases, these changes in business focus can lead to redundant and anachronistic processes which contribute to a reduction in overall efficiency. The process excellence initiative will provide structure to the identification of inefficient processes and apply a holistic approach to their redesign in order to deliver benefits in three areas: cost optimization, environmental improvement and risk assessment and balancing.

Process redesign could, for example, automate a manual process by establishing an electronic approval workflow and audit trail that is consistent across several business units. This improvement would streamline and standardize the process, reduce time between hand-offs, eliminate paper use, and provide increased controls through electronic logging and reporting. It would provide benefit in all three targeted areas identified above. In cases where the three benefit areas may be in conflict, an approach will be taken to strike a balance amongst them to ensure that the costs are appropriate, the environmental impact is positive or neutral, the risk is evaluated and mitigated wherever possible, and that sufficient controls are in place.

Business model

The business model is simple: the cost of dedicated staff to identify and implement business process improvements across NYPA will be funded, over time, through the realized savings from successfully executed projects. Based on preliminary research of peer utilities and an initial evaluation of opportunities at NYPA, it is anticipated that process efficiency efforts will result in reduced operating costs and facilitate the reallocation of resources to areas in the organization with growing need, thereby maximizing organizational efficiency. Benefits realized as a result of the process excellence function will be tracked to ensure the anticipated outcomes are achieved, with the results effectively communicated across NYPA.

Thoughtful and effective internal engagement is a crucial component in implementing a culture of process excellence. Employees must understand that the intent of the initiative is to make their work more manageable and rewarding; this understanding will allow employees to embrace and own the positive changes resulting from process improvement. Key to the success of the process excellence initiative will be a steadfast adherence to its three drivers and guiding principles: cost optimization and environmental sustainability, balanced alongside an assessment of risk.

Continuous improvement efforts will also reinforce, with our stakeholders, NYPA's commitment to be an efficient and streamlined business.

An initial high level review with senior management identified over 40 processes are candidates for review and this will be the starting point for the process excellence initiative. Costs of the initiative include the salaries of the process excellence team, training, software, and trade organization membership; these will be funded via internal operating expenditure and capital expenditures as appropriate.

Financial Summary

The table below illustrates the anticipated net cash flow once anticipated costs are deducted from the total anticipated cost savings and increases in revenue.

Category	2014	2015	2016	2017	2018	2019	2020	Post-2020
Total cost reduction and revenue	\$ -	\$ 1,346	\$ 2,691	\$ 4,037	\$ 5,383	\$ 6,729	\$ 6,729	\$ 6,729
Site O&M expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
HQ/Overhead/Other expenses	\$ 358	\$ 743	\$ 672	\$ 672	\$ 672	\$ 672	\$ 672	\$ 672
Capital expenses	\$ -	\$ 200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total expenses	\$ 358	\$ 943	\$ 672	\$ 672	\$ 672	\$ 672	\$ 672	\$ 672
Third-party funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net cashflow	\$ (358)	\$ 403	\$ 2,020	\$ 3,365	\$ 4,711	\$ 6,057	\$ 6,057	\$ 6,057
Accumulated net	\$ (358)	\$ 45	\$ 2,065	\$ 5,430	\$ 10,141	\$ 16,198	\$ 22,254	\$ 28,311
Discounted net	\$ (358)	\$ 380	\$ 1,797	\$ 2,826	\$ 3,732	\$ 4,526	\$ 4,270	\$ 17,986

All numbers are \$ '000

Initiative NPV	\$ 35,158
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The financial summary reflects the total costs and saving/benefits associated with this initiative. Net savings (time and money) will provide necessary resources to support NYPA's vision and initiatives, in addition to mitigating potential costs and/or rate increases in the future.

High Level Timeline

Activities	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
Strategic Initiative begins		◆								
Formalize team governance, structure and goals										
Identify process improvement opportunities for business plan										
Define methodology and tools/templates to be used										
Select initial projects										
Select Process Excellence staff										
Kick-off and implement initial projects										
Ongoing Screening of future projects										
Ongoing implementation of projects										
Ongoing communication throughout organization										
Process Excellence success established, ongoing function										◆

Risk of the initiative

The risks associated with the initiative can be grouped into the following key areas:

- 1. Resistance from employees:** Without effective staff engagement, there is a potential for some process changes to be perceived as efficiency measures aimed at staff reduction. If employees feel uninvolved in process improvements, they may be less cooperative and the success of improvements could be in jeopardy. Understanding and addressing this potential employee concern before changes are implemented will help the initiative succeed.
- 2. Benefits not sustained:** Measurement and control are key aspects to ensure the success of this initiative. There is a risk that processes will revert to the previous inefficient state without effective benefit measures and controls to ensure improvements are sustained.
- 3. Opportunity Cost:** Most departments and groups tend to have multiple tasks, assignments and processes as part of their job responsibilities and deliverables. A process excellence initiative in one area may temporarily impact other processes as a result of time and resources devoted to the specific process improvement area.

STRATEGIC RATIONALE

Business strategy and rationale

The evolution of NYPA has led to inefficiencies in some areas due to silo-ed, outdated and overlapping processes. There have been one-time efforts to deliver process improvements that have resulted in increased efficiency. These include: Project Summit, which led to the reorganization of scheduling and settlement in February 2014; the ReCharge NY process definition project that allowed the new program to launch smoothly and without

issue; and the S3-Forecast Energy Revenue process improvement project that increased overall process throughput by more than 200% as a result of an overall reduction in both cycle time and the resources needed to execute the process.

There are also several process improvement efforts currently underway. For example, Project PI in Operations which has the objective of clarifying and streamlining processes associated with non-recurring Operations projects for the engineering and project management departments. These one-off improvement projects demonstrate that there are both opportunity and capability to embed process excellence within NYPA culture.

Establishing a Process Excellence function will deliver significant benefits by providing structure to the identification of inefficient processes and a holistic approach to their subsequent optimization. It will deliver improvements through cost and/or risk reductions while a specific focus on sustainability will also ensure environmental benefits. In addition, it will increase the efficiency of internal business operations and provide a strong foundation for the implementation of the 2014-2019 Strategic Plan. It is likely that once a comprehensive assessment of the potential for process improvement is carried out and there is greater clarity about the exact processes that will be assessed under the initiative, the ultimate benefits of the process excellence function will be found to be higher than estimated in this business plan.

In line with the new Strategic Plan and Mission, NYPA must continue to measure its performance. Part of the initial work of the Process Excellence team will be a more thorough study of best in class utilities that will result in the establishment of benchmarks and metrics to assess performance.

Alignment with strategic goals

Strategic goal	Type and Degree of impact	Description of impact
Financial Effectiveness: Maximizing the financial capacity of NYPA to make capital investments that help achieve our goals	Positive - Medium	Potential projects have an anticipated financial benefit equal to multiples of the initial investment.
Operational Effectiveness: Maximize the efficiency, reliability and flexibility of our assets and organization	Positive - Medium	Effective processes, with clarity around tasks and roles, are repeatable and reliable, with minimum defects. This increases NYPA's ability to transmit and generate power reliably.
Value From Energy: Maximizing the benefit / minimizing the negative impact of each unit of energy delivered to the state / customer	Positive - Low	The launch of low cost power programs will benefit from efforts to define program processes at the start. Clarity around steps and roles reduces issues and risks associated with new processes, and will increase their efficiency. Streamlined processes will better support the implementation of Energy Efficiency projects.

Alignment with key values

Values	Degree of impact	Description of impact
Sustainability	Positive - High	The framework includes a specific focus on sustainability efforts
Safety	Positive - Low	Clear, well understood processes will improve safety
Compliance	Positive - Low	Clear, well understood processes will improve compliance
Environmental Responsibility	Positive - Medium	The framework includes a specific focus on sustainability efforts
Employee Development	Positive - Medium	NYPA employees will have enhanced process excellence capabilities

INITIATIVE OVERVIEW

Description of the opportunity

Research into process efficiency programs at peer utilities demonstrated organizational benefits from investing in improving the efficiency of internal business processes. The success of such initiatives depends on the current condition of organizational processes, the suitability of the methodology used to assess and address the issues identified, and the effectiveness of implementation. While the success of individual process improvement projects may vary, evidence suggests that benefits from process improvement can be significant.

For example, the Jacksonville Electric Authority (JEA) implemented a similar program with eight dedicated staff members and has realized \$579 million in hard and soft cost savings since 2000. The dedicated staff was supported by a larger group of trained and certified employees from different business sectors, allowing JEA to complete over 580 projects since 2000. For one process project, JEA conducted an assessment of the equipment needed on service trucks, including how equipment was used and where it was stored. JEA was able to eliminate unnecessary items on the trucks and improve access to those items used most frequently. Eliminating unnecessary items translated to a reduction in truck weight and fuel savings which became significant when totaled for the entire fleet. Changing the layout of items on the trucks translated to less time spent looking for equipment needed for each task, and allowed workers to identify missing equipment before traveling to a job site. It also improved safety, as this was one of the criteria used to determine the location of equipment on the truck.

Within NYPA there is clear support for process improvement. Discussions with the Executive Management Committee (EMC) have led to the recommendation of more than 40 processes for review, indicating that there is a strong opportunity for such a function.

Anticipated financial benefits from improving these 40 identified potential processes are estimated to be \$6.7M ($\pm 30\%$) annually after year 5, based on high-level estimates provided by process owners and participants. In addition, these processes do not represent the entire portfolio of processes that are

candidates for improvement; thus the total potential benefit is likely to exceed these estimates.

Initiative aim (desired outcome)

This initiative will result in the ongoing optimization of processes at NYPA and in doing so will provide value in the form of reduced costs and environmental impact, balanced against an assessment of risk. In addition, it will provide opportunities for resource allocation to support evolving priorities and facilitate a more streamlined business model that will be evident to NYPA staff, customers, and stakeholders.

The initiative will establish a new team responsible for instituting process excellence across NYPA. The team will identify candidate processes that will benefit from in-depth process maturity and efficiency analysis; the current state will be assessed and the future desired state defined; with clear steps to get from current to future state identified. This approach will be repeated in areas where process concerns are identified. The team's comprehensive understanding of process excellence and best practices will be shared with staff across NYPA where process excellence projects are implemented.

Initiative Scope

All NYPA processes – including, for example, how we bill our customers and how we procure goods and services, could potentially fall within the scope of the process excellence initiative. Through interviews with EMC and other senior staff, more than 40 candidate processes were identified as having the potential to benefit from this initiative. A targeted survey was subsequently circulated to the owners of these processes to capture the suitability of each candidate process for assessment under the initiative and the potential benefits that could be achieved.

Consequence of maintaining status quo

In the absence of any action, process deficiencies will remain and NYPA will operate at a sub-optimal level. In that case, a greater number of staff members may be needed to support on-going operations and the work required to successfully implement the transformative initiatives contained in the 2014 strategic plan, both of which will lead to

a higher overall cost.

Without a specific focus on process excellence, we will miss an opportunity to streamline operational practices and improve resource efficiency, which could compromise the implementation of the new strategic initiatives. In addition, without a specific focus on sustainability within NYPA processes, it will be difficult to further advance internal green goals and demonstrate leadership to customers and stakeholders in this area. The process excellence strategic initiative is vital to create the effective and efficient base upon which the other strategic initiatives will be built.

Considered alternatives

The team considered two variations on the proposed solution presented in this business plan. Both also involved the development of a Process Excellence function. Under the first option, the team would be formed with external consultants. Under the second, the team would not comprise dedicated staff but would instead be comprised of internal staff loaned to the initiative on a part-time basis.

The major disadvantage of using consultants is that it would not promote development of process excellence expertise within NYPA. While we anticipate using some level of initial consulting support to institute best practices into our methodology, a key aim of the initiative is to enhance internal process excellence capabilities. The concern associated with the second option is that a team comprised of part-time NYPA staff might have competing priorities, and that insufficient time might be devoted to process excellence work.

SOLUTION

Proposed solution

The Process Excellence function defined in this business plan will provide the structure for NYPA to define, analyze, improve, measure, and control internal processes within, and across, business unit boundaries. By optimizing cost, facilitating environmental improvements, and assessing risk, the Process Excellence function will enable NYPA to pursue its new mission, better serve its customers, and evolve with an energy industry that is in the

midst of significant change.

The team will initially be comprised of three full-time staff members who will execute projects in parallel and perform a range of ongoing activities focused on process excellence. Preferably, at least two of the three positions will be filled by qualified internal staff to capitalize on institutional knowledge and allow the team to commence its first project expeditiously.

For each project, the team will work with subject matter experts (SMEs) from the business units involved in the target process who will act as “change agents” for the new process. The role of these change agents will be to collaborate with the Process Excellence staff and provide subject matter expertise. Their knowledge of the business will ensure that new processes are designed effectively. The involvement of change agents from the beginning of the project will ensure they are engaged and vested in the process, and will increase the likelihood of adoption of change, including potentially new processes. During the projects, change agents will gain knowledge of Process Excellence that will allow them to continuously improve processes even after the Process Excellence team has moved on to other projects.

The Process Excellence team will also collaborate with various NYPA departments, including the Office of Strategy Management, Risk Management, Sustainability, Audits, and the Controller group, to ensure process excellence efforts are aligned with NYPA’s strategic direction, positively or neutrally impact the environment, appropriately assess risk, and strengthen controls where possible.

It will be of critical importance to monitor the performance of the process excellence function in terms of costs efficiencies attained, risks mitigated and environmental improvements delivered. The governance framework set up by the process excellence team will include explicit reference to performance monitoring over time and the establishment of metrics to support this. At the outset of each new project, an assessment of potential metrics will be completed, with these metrics refined over time as the team obtains a clearer understanding of the areas that should be part of this ongoing assessment. At the end of each project, the team will finalize the metrics and begin

capturing relevant data to support effective performance measurement. The metrics should be reviewed periodically to ensure that they continue to capture the required information and provide transparency on the improvements being delivered.

Roll-out plan

Following Trustee approval, the Process Excellence function will be staffed and trained, the function's charter refined, and governance established with methodology, metrics, and tools. The goal is to have the function fully staffed from the start. This will allow the team members to initiate process improvement projects quickly, while the manager can dedicate attention to establishing governance, methodology, tools, communication, process identification, project screening, and building the project pipeline. Fully staffing the function also establishes its credibility and demonstrates NYPA's support of the function by providing the necessary resources for success. Once the team is in place, the most appropriate approach to secure process efficiencies will be identified.

Lean and Six Sigma are the two most commonly referenced methodologies used to support organizational process excellence. The goal of both methodologies is to eliminate waste, but they differ in their focus and approach. While the Lean approach involves an assessment of the entire value chain and focuses on removing steps from the process that do not directly add value, the Six Sigma approach strives to reduce waste by removing variation in organizational processes. Each methodology has its strengths, and in some cases the best approach is to combine aspects of each and develop a toolkit tailored to the organization's needs. It is likely the staff will adopt this hybrid approach and use a combined Lean Six Sigma methodology. This will allow NYPA to pick the parts of each methodology that best suit its needs.

Once staff is in place and trained, one to two processes will be selected for further evaluation by the team and the initial projects will begin. The staff will work with consultants who will provide expert guidance during the initial projects and support the staff in establishing governance. It is important that all three positions are staffed so that they all benefit from the expert guidance of the consultants. At this point, NYPA leadership and key business unit members participating in the projects will be trained

in process excellence. Once the initial projects are complete, the team will measure and monitor benefits, while identifying the next projects that should be assessed using the process excellence methodology. The team will also work to establish a project pipeline and communications plan. The strategic initiative will be considered complete once the final step of the roll-out plan - establishment of the communication plan – is complete. At that point, the Process Excellence function will become an ongoing function, rather than a strategic initiative.

Suggested business model

The proposed business model is for three dedicated staff to identify and implement business process improvements across NYPA, and for this cost to be funded through the realized savings from executed projects. Process efficiency efforts will result in reduced operating expenses in the targeted area, and will facilitate the reallocation of resources to other areas of need in the organization, thereby avoiding future costs and maximizing overall efficiency.

A key objective of this strategic initiative is to develop process expertise within NYPA. The Process Excellence function will work with business units to facilitate improvement. Business unit members who work on process excellence projects will become "change agents" and after project completion, they will continue to utilize their process excellence knowledge to improve processes over time. This is a professional development opportunity for the change agents, who will receive training in process improvement, with potential for certification.

The team will continue to leverage information from comparable organizations to grow their understanding of best practices and apply these principles across NYPA. To do this, the team will develop effective working relationships with other utilities that have process improvement functions in place to better understand the approaches they have adopted and the subsequent benefits attained. Where possible, the team will take advantage of existing networking opportunities to engage in these discussions but will also set up dedicated meetings to share experiences. If necessary, the team will secure consultancy support to attain a more holistic understanding of best practices emerging across both utilities and other industries.

Effective sharing of this information across NYPA will help to secure optimal process excellence benefits. This will be achieved when the process excellence team becomes embedded in the organization and effectively trains change agents on relevant tools, methodologies and best practices. In addition, as set out in the marketing section, the team will develop a website and quarterly newsletter to share information regarding progress of the initiative, lessons learned and best practices.

Suggested governance structure

Several options for the organizational structure of the Process Excellence function have been considered. At this time, we recommend that the function be incubated in Business Services' Office of Strategy Management group, the aim being to locate the group in a business unit that will allow independence in selection and analysis of processes, as well as the ability to act across the enterprise. The core Process Excellence function, comprised of three full time employees, will be responsible for day-to-day operation and roll-out of the initiative.

The team will be led by a manager with two business process improvement analysts as staff. We have developed examples of job descriptions and suggested several skillsets for the three staff; they are available for review. The success of the Process Excellence function will require significant interactions with SMEs from across business units, as well as the incorporation of metrics and controls to ensure estimated savings and benefits are realized and sustained. The involvement of SMEs will ensure changes are effective and a partnership is established with the business units. This collaboration will also ensure that process improvement becomes embedded in day-to-day work, and that NYPA adopts process excellence as part of its culture.

Potential initiative scenarios and selection / prioritization criteria

Processes to be considered for improvement will be identified and evaluated according to a set of weighted criteria. As a public utility focused on reliability, economic development, environmental sustainability, innovation, and technology development, monetary savings are not always a primary driver. The selection criteria include:

- Cost reduction
- Environmental impact
- Impact on employee retention
- Time savings (including: staff hours, number of work hand offs, and cycle time or time for the process to transpire)
- Time necessary to implement and realize results/savings, documentation and knowledge retention capability
- Alignment with best practice
- Alignment with NYPA's Vision, Mission and Goals
- Customer satisfaction, where applicable

BENEFITS AND REVENUE

High-level benefit description

The objective of the initiative is to reduce costs and environmental impact while assessing and balancing risk. Costs will be reduced via:

- increased productivity due to more efficient use of resources as well as the elimination of duplication and unnecessary process steps;
- the adoption of a consistent process evaluation methodology that will reduce errors and potentially avoid fines;
- the implementation of standardized software; and
- internal process expertise that will eliminate the need for on-going consulting expenditures.

A focus on sustainability, more efficient use of resources and reducing waste will ensure improvements in environmental performance. In addition, safety will increase due to clarity around and continual improvement of processes; staff morale will improve as a result of process understanding and expectation management; and customer satisfaction will rise due to higher quality services and interactions.

Benefits were estimated using the following process:

- Surveys were distributed to process owners/participants identified by the EMC. For each process there were as few as three or as many as seven respondents.
- Respondents were asked to give their best estimate of the level of potential benefit if the process was improved. They were able

to select ranges of potential dollar savings in multiple categories: time savings, fine reduction, revenue increase, and other.

- All results for each process were averaged; all responses were included.
- The benefits and revenues depicted in the tables, and cited within this business plan, are based solely and entirely on the survey results.
- The survey results for the time savings and fine reduction categories reflect costs avoided if employees can be reallocated to new, higher priority tasks and the risk of incurring fines can be reduced. These estimates have been treated conservatively and reduced by a factor of 50%, thereby acknowledging that: 1) hours saved will not always be achieved by individuals with the precise skills needed for new, priority tasks and 2) reducing risk of fines is a probabilistic rather than absolute saving.
- The surveys were not intended to replace thorough analysis on each potential process. That analysis will occur during the selection and initiation phases of the individual process improvement effort and the Process Excellence team along with the process owner will decide together what savings can be realized. The survey mechanism was used to capture a broad-brush feel for the opportunity embedded in NYPA processes. Since surveys are not an exact science, we have applied a confidence level of “Low” to the benefits estimates put forth here, allowing for a deviation of $\pm 30\%$ in stated benefits.
- The O&M savings may occur for activities at headquarters or the sites depending on the specific processes selected to be addressed.

Total Benefits (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Savings from								
- Lower O&M (FTE)	\$ -	\$ 249	\$ 499	\$ 748	\$ 997	\$ 1,247	\$ 1,247	\$ 1,247
Reduction in Fines	\$ -	\$ 2	\$ 4	\$ 6	\$ 8	\$ 10	\$ 10	\$ 10
Increased Revenue	\$ -	\$ 656	\$ 1,312	\$ 1,968	\$ 2,624	\$ 3,280	\$ 3,280	\$ 3,280
Other Cost Savings	\$ -	\$ 438	\$ 877	\$ 1,315	\$ 1,753	\$ 2,192	\$ 2,192	\$ 2,192
Total (\$ '000)	\$ -	\$ 1,346	\$ 2,691	\$ 4,037	\$ 5,383	\$ 6,729	\$ 6,729	\$ 6,729

Total Benefits (\$ '000)	\$ 60,557
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Benefit assumptions

The benefits represent a high level indication of the scale and type that could be achieved and are a range based on a survey of over 40 processes that was completed in the second quarter of 2014. We engaged executive management to identify candidate processes and completed a subsequent survey with process owners to assess the scope of potential benefits. This represents a top-down approach to identifying the pool of opportunity.

Under a bottom-up approach, we would engage working level staff across NYPA. We anticipate that discussions with staff that use these processes on a day-to-day basis would reveal more opportunities for process improvement. For this reason, we believe that the benefits cited within this business

plan are understated. We will conduct this bottom-up analysis during the initiative roll-out.

We estimated a flat annual benefit based on the 40+ potential projects identified by senior management, the total benefit, and number of projects that will be completed per year. We also anticipated that the benefit for each project would be sustained for a period of five years, as over time, changes in regulation, technology, and NYPA's organizational structure, as well as the dynamic nature of the energy business, will reduce the efficiency of redesigned processes.

Anticipated increases in revenue could result from projects such as investments in plant infrastructure.

Confidence level of benefit realization

The following table represents the overall confidence that the specified revenue and benefits will be realized, using the scale that follows.

Confidence level	Benefit/revenue realization range
Very high	+/- 5% of expected benefits
High	+/- 10% of expected benefits
Medium	+/- 20% of expected benefits
Low	+/- 30% of expected benefits
Very low	+/- 50% of expected benefits

Benefits to NYS	Low
Revenue	Low

	Low	High
Total benefits to NYS (\$ '000)	\$ 42,390	\$ 78,725
Total revenue (\$ '000)	\$ -	\$ -

Risks to benefit realization

Benefit risk overview			
Risk driver	Description of impact on benefit realization	Probability	Impact
Employees have a negative perception that the initiative will reduce headcount	Some employees are unwilling to make the changes proposed and this reduces benefits attained	Significant	High
Employees resist change under the initiative as they don't appreciate benefits	Some employees are unwilling to make the changes proposed and this reduces benefits attained	High	High
The processes selected do not offer the most significant & immediate results	Processes that would deliver greater benefits are not assessed and benefits are not optimized	Medium	High
The changes made negatively impact quality of service	The negative impact on service could undermine the benefits attained from the initiative	Medium	High
The weighting applied to assess relative cost / environmental benefits is not optimal	Decisions to amend processes may detrimentally impact cost / environmental measures	Medium	Medium
Inclusion of processes involving sensitive info. may create vulnerability	If the information was recovered by external parties under FOIL this may outweigh the associated benefits	Low	High
The changes made do not represent industry best practice	The benefits attained under the initiative would not be the optimum benefits that could be achieved	High	Low
Benefits are not sustained.	Processes revert back to the previous state and operational practices are not optimized.	Medium	Medium

FUNDING FOR THE INITIATIVE

Intended sources of funding

The Process Excellence initiative will be funded via NYPA's O&M budget, with a software capital expense expected in 2015. In the long-term, this initiative will be self-funded through savings realized by the Process Excellence projects that are undertaken.

Intended total funding sources			
Source	Selected	Value (\$ '000)	Percentage of funds
Bond issuance	No	\$ -	0%
Cash reserves	Yes	\$ 1,301	100%
Third-party funds	No	\$ -	0%
Other	No	\$ -	0%
Total		\$ 1,301	100%

Expected annual funding profile								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Bond proceeds								
Third-party funds								
Total external funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest payments								
Debt retirement								
Other								
Net external funds impact	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NYPA cash	\$ 358	\$ 943	\$ -					
<i>Total annual cost</i>	<i>\$ 358</i>	<i>\$ 943</i>	<i>\$ -</i>					

Total external funding (\$ '000)	\$ -
Total NYPA cash (\$ '000)	\$ 1,301

COSTS AND RESOURCES

Initiative cost and resources (i.e. costs and resources associated with implementing the initiative)

O&M Costs HQ, Overhead, & Other costs (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Internal labor	\$ 153	\$ 589	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Training / Consulting	\$ 172	\$ 120	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
APQC Membership and Other	\$ 33	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total annual HQ/OH/Other costs	\$ 358	\$ 743	\$ -					

Total HQ/OH/Other initiative costs (\$ '000) \$ **1,101**

Capital expenses (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Physical assets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IT - BPM Software Suite	\$ -	\$ 200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total annual Capex	\$ -	\$ 200	\$ -					

Total initiative Capital expenses (\$ '000) \$ **200**

Total initiative costs (\$ '000) \$ **1,301**

Resources (FTE)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
IT	0	0	0	0	0	0	0	0
Business	3	3	0	0	0	0	0	0
Technical/(Engineer)	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
Total annual FTE	3	3	0	0	0	0	0	0

Initiative cost assumptions

(i.e. cost associated with implementing the initiative)

- Implementation of the initiative will be complete by the end of 2015
- Three staff will support full roll-out; one manager and two process analysts
- Lean/Six-sigma training will be needed for the Process Excellence function (classroom) and first four change agents (online) (\$20,000 in 2014, \$15,000 in 2015)
- Temporary consulting services will be needed to provide guidance during initial projects and when the team is establishing its governance structure (\$150,000 in 2014, \$100,000 in 2015)
- Travel to sites and incidental expenses (\$3,000 in 2014, \$5,000 in 2015)
- Continued annual membership to the American Productivity and Quality Center (APQC) is recommended (\$20,000 per year as of 2015), other IT costs (\$28,600 in 2014 and \$6,100 in 2015), and miscellaneous costs (\$3,500 in 2014 and \$7,500 in 2015)
- There is a \$200,000 estimated capital expense in 2015 to purchase a BPM (Business Process Management) software suite which will provide the Process Excellence team with an efficient, interconnected system that consolidates data and supports the project management effort including modeling, analysis, process optimization and reporting.
- Costs associated with improving individual processes, are not included in this Business Plan as they will be specific to the process under assessment (e.g. purchasing a new piece of software in order to automate a

process). A cost benefit analysis will be undertaken for each project as part of its implementation.

Post-implementation costs and resources (i.e. incremental costs and resources associated with running/maintaining the solution post-implementation)

O&M Costs HQ, Overhead, & Other costs (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Internal labor	\$ -	\$ -	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589
Training / Consulting	\$ -	\$ -	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50	\$ 50
APQC Membership / Other	\$ -	\$ -	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33
Total annual HQ/OH/Other costs	\$ -	\$ -	\$ 672					

Resources (FTE)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
IT	-	-	-	-	-	-	-	-
Business	-	-	3	3	3	3	3	3
Technical/(Engineer)	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Total annual FTE	-	-	3	3	3	3	3	3

Post-implementation cost assumptions (i.e. cost associated with running/maintaining the solution post-implementation)

To maintain focus on process excellence following completion of the initiative, staffing and support costs will continue, but are expected to be below 2015 levels. Consideration will also be given to the

need for refresher training for the members of the Process Excellence function recognizing the potential for evolution in process efficiency approaches and best practice.

Confidence level of initiative and post-implementation costs

The following table represents the overall confidence that the cost levels will be met.

Confidence level	Cost range
Very high	+/- 5% of expected costs
High	+/- 10% of expected costs
Medium	+/- 20% of expected costs
Low	+/- 30% of expected costs
Very low	+/- 50% of expected costs
Initiative costs	High
Post-implementation costs	Medium
	Low High
Total initiative costs (\$ '000)	\$ 1,171 \$ 1,431
Total annual post-implementation costs (\$ '000)	\$ 538 \$ 806

Comments

There is a reasonable level of confidence in the quoted figures. The number of staff allocated is based on the assumption that two to three significant processes (and several smaller processes) will be addressed annually. If greater throughput of

processes is desired, additional staff will be required. A cost benefit analysis will be performed to determine the appropriate balance of staffing and throughput.

IMPACT TO MARKET

Overview of marketing approach

Because this initiative is internally focused, there are likely to be limited market impacts. Depending on the type of projects the Process Excellence function implements, customers may see improved customer service. Customer facing processes will be evaluated and assessed to ensure that any changes result in an improved customer experience.

Overview of market trends

Many other public power and investor owned utilities have long-standing process efficiency and process excellence business groups or functions. During the research and development phase of this initiative the team spoke with process excellence experts from McKinsey Consulting, Hess Corporation, and JEA who confirmed the widespread and established trend that process improvement/process excellence functions result in tangible and intangible value for those entities that adopt them. JEA (a public power company similar to

NYPA) noted time savings, cost savings, and improved public image that are directly attributable to their process excellence initiative.

JEA established their process efficiency group approximately 14 years ago, and it continues to provide benefit to the company. In total, JEA has a staff of approximately 2000 employees, of which 1750 are unionized. They have eight staff dedicated to process efficiency in their organization. JEA uses the Six Sigma methodology which has a colored belt system indicating the level mastery of the Six Sigma methods. JEA has nearly 100 black belt trained employees (not all are certified) and 200-300 green belt trained employees. All salaried employees are mandatory yellow belt trained, and union personnel are yellow belt trained on a voluntary basis.

NYPA's role in the market

While there are many consulting firms that can help develop or provide process efficiency or

improvement functions, the long-term success of the Process Excellence function depends on developing in-house capabilities. Based on the initiative team's research, the success or failure of the Process Excellence function will depend on the ability of the group to gain the trust of NYPA staff. Should the essential functions of the group be outsourced or left to consultants, its success will be limited and the timeframe in which success might be achieved elongated.

Expected impact on customer segments

The Process Excellence initiative is anticipated to have a moderate and positive impact on NYPA's customer segments. This initiative could lead to improved cycle times for billing, as well as improved resolution of customer concerns.

ORGANIZATIONAL IMPACT

Overall degree of change

To secure maximum benefits from the initiative, effective communication regarding the role of the Process Excellence team will need to accompany the establishment of the function at NYPA. The effort will focus on optimizing efficiency and supporting environmental improvement, emphasizing management support for the initiative and providing routes for two-way dialogue to embed the changes needed. The combination of these messages will help to reduce resistance to change by providing clarity about the rationale for the initiative and opportunities for employees to influence the scope of the initiative.

Comments

As specific processes are targeted for optimization, the group will assess the impact of change to the business unit(s) across several categories including process, technology, organization, and others.

Internal impact overview	
Business Unit	Description of impact
Internal Audits	Upon initially establishing the Process Excellence function, the group will reach out to Audits for audit information as needed. Upon completion of process improvement, it is expected that Audit findings will reflect improved process.
Business Services	As processes are evaluated for potential improvement, Business Services will likely be asked to assist with pertinent financial estimates as cost and cost savings estimates are calculated. The Office of Strategy Management will work with the Process Excellence function to establish meaningful metrics to help measure the success of the initiative.
Enterprise Shared Services	Dependent upon the initiative, the process selected for improvement could require support from ESS regarding potential HR impact or changes.
Law	As processes are evaluated, some could require legal advice prior to implementation.
Economic Dev. & Energy Efficiency	Impact in this area is expected, but the extent will be determined as specific process excellence projects are scoped.
Operations/ Transmission	Impact in this area is expected, but the extent will be determined as specific process excellence projects are scoped.
Governmental & Communications	As the Process Excellence function is embedded across the organization, we will ask the Communications group to help in sharing information regarding successes and impact on NYPA.

Required skills

The Process Excellence function will be comprised of three full-time staff, preferably including at least two qualified internal transfers. Each will have experience in improving processes and/or managing projects. The initiative budget includes costs for Lean and/or Six Sigma training. Also required are strong interpersonal and communication skills, as well as negotiation, facilitation, problem-solving, and analytic skills and experience. The process

excellence staff must have the ability to motivate team members, drive change, and facilitate problem-solving discussions. For each of the processes addressed by the process excellence approach, the team will receive support from SMEs working in the relevant business unit(s) who will bring project-specific expertise as well as acting as agents of change.

Skills overview			
Business Unit	Skills required	Current status	Suggested action
Business Services	Experience in process excellence approaches; excellent communication, facilitation, problem solving, analytic skills.	Existing	Train
IT	Experience in process excellence approaches; excellent communication, facilitation, problem solving, analytic skills.	Existing	Train
Change Agents	Process owners that can provide process-specific expertise and act as change agents	Existing	Train

Comments

Labor costs included in this business plan are based on compensation estimates provided by HR for the described skillset.

EXTERNAL STAKEHOLDER IMPACT AND MARKETING PLAN

External impact overview		
Stakeholder	Description of impact	Impact
Customer	Enhanced quality of services and interaction from/adopting NYPA's improved processes	Positive - Medium
Distribution Utilities	Ease of conducting business with NYPA	Positive - Medium
NYISO	Ease of executing bids, payment, scheduling	Positive - Medium
Transmission Operators	Ease of conducting business with NYPA, ease of integration with other TO's corporate processes, i.e. Transco	Positive - Medium
State Agencies	Aligns NYPA with the SAGE (Spending and Government Efficiency) program established by Governor Andrew Cuomo	Positive - Medium
Third Party Agencies	Vendors: negotiate process changes; neighboring community – positive impact of reduced environmental footprint	Positive - Medium

Description of marketing strategy

Because this initiative is internal, an external marketing strategy is unnecessary, but the following internal marketing/communication efforts will be undertaken:

- Kick-off event for the new business function. The event could feature a combination of presentations and workshops that would educate and engage staff around the Process Excellence initiative.
- Process Excellence function website with a process suggestion form, process excellence basics, training registration and research material. Success stories will be shared as the function matures.
- Quarterly newsletter, which details current projects, photos of process owners, and lessons learned

RISKS

Risks to NYPA as a result of implementing the initiative

Risk overview						
Category	Description	Probability	Impact	Suggested actions	Owner	Liaison
Financial	The benefits envisaged are not realized longer term	Low	Medium	Comprehensive analysis and ongoing monitoring	PE group Manager	TBD
Operational	Best practice process excellence is not maintained	Medium	Medium	Develop KPIs, monitor and revisit. Use best practice	PE group Manager	TBD
Operational	More processes are identified than are manageable by the Process Excellence function	High	Medium	Regular review to identify further candidate programs	PE group Manager	TBD



STRATEGIC INITIATIVE BUSINESS PLAN for

Knowledge Management

Executive Sponsor	SVP Enterprise Shared Services
Responsible Executive	Paul Tartaglia
Project Manager	Ed Fisher
Initiative Team	Jasmine Long, Gerald McGill, Dennis Willette
Initiative Start	September 2014
Initiative End	-

TABLE OF CONTENTS

PAGE

- 3 EXECUTIVE SUMMARY**
A one-page overview containing key information about the initiative, including strategic rationale, marketing strategy, financial summary and high-level timeline
- 4 STRATEGIC RATIONALE**
A high-level summary of the strategic rationale of the initiative and how it aligns to the strategic goals and key values of NYPA.
- 6 INITIATIVE OVERVIEW**
A range of background and scene-setting information pertaining to the initiative, including why the initiative is being suggested and what it aims to achieve.
- 8 SOLUTION**
Key information around the proposed solution, including suggested business model and governance structure.
- 14 BENEFITS AND REVENUE**
Quantitative information around annual benefits expected as a result of the initiative. These benefits include cost savings and increased revenue. The section also includes a benefit realization overview.
- 16 FUNDING FOR THE INITIATIVE**
High-level specification of the intended funding sources that will be used to fund the implementation.
- 16 COSTS AND RESOURCES**
Quantitative information around annual cost and resources required to implement the initiative, as well as any permanent on-going costs that will be incurred as a result of implementing the initiative.
- 18 MARKET TRENDS**
A high-level market analysis, followed by details around how the initiative is expected to impact customers segments and NYPA's products and service offerings.
- 19 ORGANIZATIONAL IMPACT**
Overview of how the initiative is expected to impact NYPA's business units, including an overview of the skills required and whether those skills currently exist in the organization.
- 21 RISKS**
A high-level risk overview, specifying key risk information such as the probability and severity of key risks, risk owners and action plans.
- 22 REFERENCES**
Resources used during the development of the business plan, or sources of information cited.

EXECUTIVE SUMMARY

Strategic rationale and drivers of the initiative

Knowledge at any organization is a vital asset and NYPA has always demonstrated the strength of a knowledgeable work force.

For NYPA, however, effective and timely use of information is becoming hindered by the existence of multiple, disintegrated data repositories and extensive undocumented knowledge. Compounding the risk associated with this fragmented management of information is the growing staff turnover resulting from retirements, greater worker mobility, and the energy industry talent shortage. Currently, the Authority has 27% of employees eligible for retirement within the next five years and of that group 48% can retire within one year. The trend of increased turnover of early career employees exacerbates the problem that critical knowledge is leaving the organization at an increasing rate, and those employees who fill these gaps are going to have less time to get up to speed and be productive.

When knowledge is not managed on the enterprise level, the result is often redundancy of effort, delayed decision-making, inefficient processes, and lack of clarity on data validity. NYPA cannot afford these results if it is to realize its far-reaching 2014-2019 strategic plan. Responding to the dramatic changes occurring in the energy industry, the plan calls for NYPA to provide customers with innovative services and New York State with leadership in developing a sophisticated energy infrastructure. That can only be accomplished with a flexible,

creative and empowered workforce that has access to the resources, including information and knowledge that it needs to deliver on NYPA's bold vision.

Financial/Benefits Summary

The table below provides the anticipated net cash flow once anticipated costs are deducted from the total anticipated cost savings and any increases in revenue. The benefits of implementing the knowledge management initiative were estimated using the results of a survey on knowledge and information accessibility completed by 63 employees who were designated by executive management as owners of key information systems. The difficulties and time lost to information searches cited by these individuals were extrapolated across the organization to identify the level of benefit to be expected from an effective, enterprise-wide knowledge management program. This feedback was further supplemented by the experience of other organizations that have implemented similar knowledge management programs.

The initiative is anticipated to expend \$124,000 start-up costs in 2014 and an additional \$4.7 million through 2017. The initiative will also begin realizing modest cost savings in 2015 of \$392,000, which will escalate each year until reaching a steady state of \$3.1 million in 2019. An overall initiative breakeven point will be reached in 2018 at which time the initiative costs will be fully recovered and the initiative will generate a positive cash flow.

Table 1 – Financial Summary								
Category	2014	2015	2016	2017	2018	2019	2020	Post-2020
<i>Total Benefits</i>	\$ -	\$ 392	\$ 1,097	\$ 2,038	\$ 2,508	\$ 3,136	\$ 3,136	\$ 3,136
HQ/Overhead/Other expenses	\$ 124	\$ 2,372	\$ 1,103	\$ 1,248	\$ 1,415	\$ 1,409	\$ 1,416	\$ 1,410
Capital expenses	\$ -	\$ 40	\$ -	\$ 40	\$ -	\$ 40	\$ -	\$ 20
<i>Total expenses</i>	\$ 124	\$ 2,412	\$ 1,103	\$ 1,288	\$ 1,415	\$ 1,449	\$ 1,416	\$ 1,430
Net cash flow	\$ (124)	\$ (2,020)	\$ (6)	\$ 750	\$ 1,094	\$ 1,687	\$ 1,720	\$ 1,706
Accumulated net	\$ (124)	\$ (2,144)	\$ (2,150)	\$ (1,400)	\$ (306)	\$ 1,381	\$ 3,100	\$ 4,806
Discounted net	\$ (124)	\$ (1,905)	\$ (5)	\$ 630	\$ 866	\$ 1,260	\$ 1,212	\$ 5,065

High Level Timeline

This initiative proposes to address NYPA’s knowledge issues and opportunities through the following actions and the timeline is illustrated in Figure 1 below:

- Establishing an overarching mechanism to enable enterprise-wide searches of electronic content;
- Cataloguing and providing access to the location of individuals with unique knowledge in key areas;
- Capturing and providing access to organizational relationship diagrams that go beyond a hierarchical depiction of how organizations interact and share information; and
- Facilitating the sharing of vital information and knowledge through the development of a knowledge exchange mechanism known as Communities of Practice (CoP) and through the use of formal knowledge capture tools and processes.

Risk of the initiative

There are several key risk areas associated with the initiative. Success is highly dependent on support from executive management and a dedicated staff for implementation and administration of the

program. Employees will need to see the value of the initiative and participate within their business units to derive benefit from Knowledge Management projects. Like any initiative, this initiative has development, implementation, and maintenance costs, which could be negatively perceived by external stakeholders and the public. It will be important to communicate the contributions of this initiative in supporting other, external facing initiatives such as Customer Solutions and Smart Generation and Transmission.

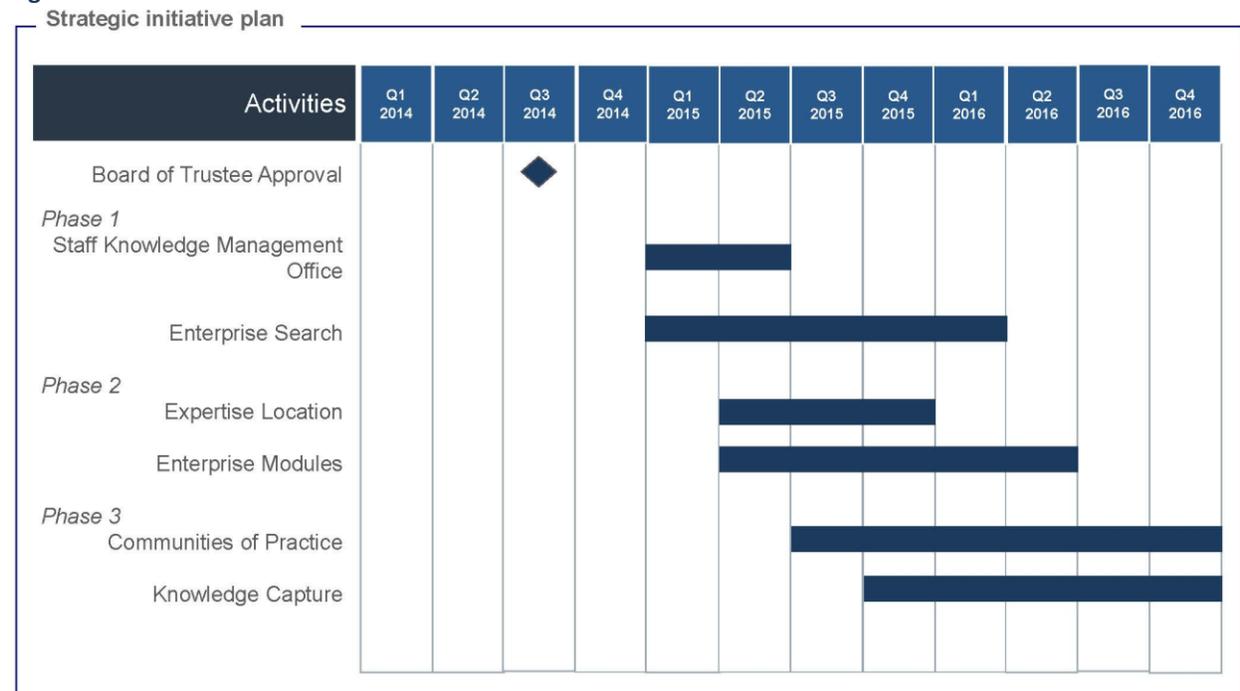
STRATEGIC RATIONALE

Business strategy and rationale

Knowledge at any organization is a vital asset. However, at many organizations, including NYPA, lack of integrated knowledge management practices can make it difficult to locate and access key knowledge required for completing specified tasks and making timely, well-informed decisions. For NYPA, several factors limit effective knowledge sharing.

First, multiple electronic data repositories have evolved over time without any coordination or overarching guidance. This has led to an enterprise where information is disconnected, held in departmental silos and often only known to the content owners and the departments where the information originated. Without specific awareness

Figure 1 - Initiative Timeline



and permissions, other staff that could benefit from the information may not have access to it or even realize that it exists.

Second, critical areas of organizational knowledge are undocumented and reside only in the intellect of NYPA staff. This represents a growing risk since a significant portion of the workforce is nearing retirement and workers in early and mid-career have become more mobile. If this knowledge is not transferred to other employees or it remains undocumented, the institutional knowledge will simply leave the organization.

These factors contribute to the difficulties that NYPA staff experience in locating critical information to perform their current roles effectively. They lead to:

- Inefficiencies in completing tasks due to the time-consuming nature of finding information;
- Duplication of effort due to a need to reproduce the same outputs multiple times; and
- Risks to the timely and effective delivery of key tasks, outputs, and decisions given the absence of necessary knowledge.

In contrast, if the knowledge needed to perform key tasks is easily accessible and readily shared, NYPA will experience enhanced efficiencies in day-to-day operations. Where the desired information cannot be retrieved electronically, implementing expertise location solutions will enable employees to locate and consult a colleague with access to the right resources.

Focusing on the future, NYPA recently developed its 2014-2019 strategic plan, which envisions a transformed NYPA, well-positioned to take advantage of significant energy industry changes

and emerging opportunities. To realize its ambitious strategic vision, NYPA will need to develop new skills and become increasingly more dynamic and flexible, with staff obtaining, understanding, and responding to information as it becomes available. An enterprise-wide effort will be needed both to identify knowledge that will be required to support future endeavors and to determine how that knowledge will be acquired and maintained.

Effective management of knowledge - and its sharing - will be critical to the delivery of the transformative strategic initiatives that are intended to empower NYPA customers, the realization of a leading-edge NYPA grid, and the facilitation of economic development in New York State.

The improved efficiency of day-to-day operations combined with a NYPA staff that has enhanced knowledge of both internal operations and external industry conditions will foster the development of an agile workforce that is able to respond quickly to changing circumstances, take advantage of emerging opportunities, and deliver energy and services in line with the evolving needs of New York State.

In addition, the Knowledge Management activities will complement and support several other strategic initiatives including the Work Force Planning efforts on developing internal expertise and the Process Excellence initiative's effort to develop the NYPA process framework.

Alignment with strategic goals and values

The following tables depict the alignment of the knowledge management initiatives with NYPA's strategic goals and values:

Table 2 – Alignment with Strategic Goals		
Strategic goals	Type and Degree of impact	Description of impact
Financial Effectiveness: Maximizing the financial capacity of NYPA to make capital investments that help achieve our goals	Positive - Low	Informed decisions based on accurate data will maximize return on investments
Operational Effectiveness: Maximize the efficiency, reliability and flexibility of our assets and organization	Positive - Medium	Reduce risk of reliability incidents by securing access to required knowledge
Value From Energy: Maximizing the benefit / minimizing the negative impact of each unit of energy delivered to the state / customer	Positive – Low	A more agile workforce will support effective delivery of low-cost power

Table 3 – Alignment with Strategic Values		
Values	Type and Degree of impact	Description of impact
Sustainability	Positive - Low	Sharing of sustainable best practices will be enhanced
Safety	Positive - Medium	Staff will have access to critical operational information which will improve safety
Compliance	Positive - Medium	Staff will have access to critical information on regulatory requirements and developments which will improve compliance
Environmental Responsibility	Positive – Low	Staff will be better able to understand environmental requirements and obligations and share best practices
Employee Development	Positive - High	Employees will have better access to required information and will be able to proactively support their own development

INITIATIVE OVERVIEW

Description of the opportunity

Knowledge management is the process of identifying, developing, capturing, storing, sharing and applying expertise and know-how. Organizations are increasingly realizing how important it is to identify and understand their institutional knowledge and be able to make effective use of it. Where staff have full clarity of the knowledge available to them and are able to effectively utilize this information, there will be greater efficiencies in the performance of key tasks and reduced risk of errors. It is equally important for organizations to understand the critical knowledge they lack so that mechanisms can be found to fill the gaps.

There are opportunities to improve the management of both explicit (documentable) and tacit (difficult to transfer) knowledge at NYPA. Information repositories have evolved over time, often in isolation, meaning that employees have limited clarity regarding if and where information exists. In addition, there is a tendency to rely primarily on the availability of internal experts rather than transfer or formalize their knowledge. With increases in retirements and the mobility of workers, this approach will no longer be effective and vital intellectual property could leave the organization.

Establishing a formalized knowledge management program at NYPA will help to address these issues and support the delivery of efficiencies in the completion of key tasks by ensuring that staff have

ready access to information. These efficiencies will be a foundational element of the agile organization needed to support the 2014-2019 strategic plan.

Numerous business case studies have demonstrated organizational benefits from investing in knowledge management programs. For example, Delphi Group, management consultancy, estimates that, on average, business professionals spend 20% of their time looking for information.

An internal survey of NYPA employees also suggests a similar trend. Respondents indicated that a few hours per week are lost on searching for information needed to perform key tasks. In addition, more than 90% of respondents noted that increased collaboration and knowledge transfer activities would benefit their daily routine. This indicates the value for NYPA of increased sharing of knowledge, information, and know-how through a structured knowledge management program.

Increased visibility about the information that exists within the organization as well as clarity about how to access it will lead to better informed decisions, enabling the staff to be more dynamic and agile. It will also encourage staff to utilize the information available to deepen their understanding of emerging trends and allow NYPA to be more innovative in response to industry changes.

Initiative aim (desired outcome)

The aim of this initiative is to provide appropriate development, management, and sharing of knowledge resources within the Authority. The initiative will deliver two key outcomes:

Improved awareness of and access to critical knowledge resources: Staff will have full clarity about the knowledge that exists within NYPA and the best way to access it. They will be able to use electronic search mechanisms to obtain relevant documented information (explicit knowledge) or identify NYPA colleagues from whom they are able to attain insights and know-how (tacit knowledge). Visibility regarding available knowledge and expertise will increase as the initiative matures and as knowledge management becomes increasingly embedded across the organization.

Improved sharing of knowledge: The formal and informal practices envisioned under this initiative will support enhanced information sharing and knowledge capture. A range of activities, including bringing employees together via Communities of Practice and conducting formal exit debriefings that focus on attaining know-how from separating staff, will support capturing and sharing critical knowledge.

These outcomes will improve NYPA's ability to execute its core processes more effectively as well as support delivery of the vision set forth in NYPA's 2014-2019 strategic plan.

Initiative Scope

There are a number of phases of the knowledge management value chain, ranging from identification of knowledge to its acquisition, capture, storage, sharing, and application. In light of the issues facing NYPA, specifically difficulties experienced in locating information and risks associated with knowledge leaving the organization, this business plan focuses knowledge management efforts, initially, on two key areas of the value chain:

Knowledge capture: The application of techniques to elicit valuable information from key individuals including insights, experiences, professional networks, and lessons learned.

Knowledge sharing: The effective exchange of information, insights, experience and know-how among NYPA staff. Knowledge sharing is facilitated by technology solutions but will also require culture change and the development of trust to ensure that new ways of working are fully embedded within the organization.

Consequence of maintaining status quo

Without comprehensive knowledge management,

there are a number of potential consequences.

NYPA will continue to lack clarity about knowledge resources across the organization. The current means of capturing and sharing knowledge will remain disjointed and inefficient. Each knowledge repository will continue to be used independently and consequently key content will remain unknown to people who would benefit from it.

The Authority will continue to lose valuable information, expertise, and know-how as a result of separation and retirement. This undocumented knowledge can be critical to NYPA's efficient operation. The rediscovery of this information may be time-consuming and incomplete. The potential exists for NYPA to fail to meet regulation or policy requirements. Further, if it does not manage its knowledge resources, it will be difficult for NYPA to respond rapidly to capitalize on opportunities presented by emerging trends within the energy industry.

Considered alternatives

The alternatives considered fall into two main areas:

Develop a central repository: An alternative to the enterprise-wide content search tool is the development of a single, central repository for storing information and documentation. A well-indexed centralized document management system can be a good foundational step towards the capture and documentation of institutional knowledge. However, these systems are often highly complex, technically challenging, and expensive. In addition, significant organizational change is necessary for successful implementation. In contrast, the enterprise-wide content search tool will allow NYPA to leverage its existing repositories with minimal disruptions to their processes, while still allowing access to content across all repositories

Staff with consultants or part-time staff: An alternative to full-time permanent staff for the knowledge management function is to form a team from external consultants or internal employees loaned on a part-time basis. The major disadvantage of using consultants is that it will not promote the development of knowledge management expertise within NYPA. A team composed of part-time NYPA staff may struggle with competing priorities leading to insufficient time being devoted to knowledge management work. Where part-time staff have been used for previous knowledge management

attempts, initial efforts were successful at collecting knowledge; however, the part-time resources were insufficient to build and maintain initial successes.

SOLUTION

Proposed solution

The knowledge management initiative encompasses a number of components that are intended to improve knowledge capture and sharing at NYPA:

- A knowledge management office (KMO) responsible for overseeing and embedding knowledge management practices at NYPA;
- An enterprise-wide search tool that will enable staff to search a range of existing content repositories across NYPA;
- A series of projects that will help NYPA staff to identify colleagues that have required know-how and support sharing of this knowledge; and
- A focus on completing and documenting exit debriefing with key staff about to separate from NYPA to capture of their insights / expertise.

Each component of the proposed solution is described in more detail below.

The Knowledge Management Office

The foundation of the knowledge management initiative is a strong core team, the Knowledge Management Office (KMO). The KMO will be responsible for the development, implementation and sustainability of knowledge management solutions that support each business unit's objectives. A dedicated KMO will secure the long-term success of the knowledge management initiative by ensuring that all facets of knowledge management have the appropriate resources and governance structures in place. The KMO will provide a number of services to support NYPA and work directly with departments and groups. The key roles of the KMO will be to:

- Develop a knowledge management strategy;
- Coordinate knowledge management activities and project selection;
- Develop, launch, and facilitate communities of practice together with corresponding IT portal-enabling tools;
- Provide training and ongoing support to business units on the use of knowledge

management tools;

- Engage business units and departments through regular communications and outreach events; and
- Measure and track knowledge management activities.

A KMO with dedicated staff will be a critical component in the success of the knowledge management initiative. Lessons learned from previous knowledge programs implemented within NYPA indicate that although the programs achieved short-term success, the absence of a formal governance structure meant they were not sustained over the longer term. For example, NYPA's previous *Knowledge Capture* program 'borrowed' staff from various departments on a part-time basis. Once specific, short-term goals were met, the resources were returned and were unavailable to sustain the initial success of those programs.

The Enterprise-wide content search

Knowledge repositories at NYPA have evolved over time with no formal strategy for enterprise adoption. As a result, NYPA has acquired several electronic content repositories that have similar features but also have specific functionalities to support certain business purposes. This has resulted in a collection of disparate repositories which can present obstacles for staff in finding and accessing the most up-to-date and accurate content.

Successful enterprise-wide content search requires two components: information that has been stored in a systematic manner and proper tools for locating and accessing it quickly. This difficulty in locating and accessing captured knowledge is an obstacle faced throughout NYPA. For example, the Corporate Communications department uses a photo management system called Merlin. There are many instances when a specific photo is taken for an event, such as when President John F. Kennedy visited our Niagara facility, but it cannot be retrieved quickly because it was not stored with identifying tags. With a systematic method for identifying information and sources of knowledge, coupled with an intelligent search tool, access to information will improve.

The knowledge management initiative will establish an electronic content search capability that leverages its existing technology investments with

minimal impact and disruption to current electronic content storage processes. Staff will continue to use the tools they are familiar with, but will have a powerful mechanism that will allow them to search for content across multiple repositories.

The integrated search tool will connect a suite of enterprise-scale content repositories including: network shared folders, Microsoft SharePoint, OpenText Content Management Server (LiveLink), Microsoft Dynamics (CRM), Microsoft Exchange (email), Oracle Primavera, MerlinOne Digital Asset Management, BlueCielo Meridian Enterprise and IBM Maximo.

To ensure that the electronic content search capability is truly powerful, the KMO will work with business units to establish an enterprise vocabulary for classification, known as taxonomy. Together, the electronic search capability and taxonomy will support the following objectives:

- Enable easier and faster access to information;
- Standardize the process of classification across content repositories and the organization; and
- Simplify the process of knowledge discovery.

The enterprise-wide content search will include:

- A front-end search process that is linked to the taxonomy and allows users to click onto subject areas to be directed to relevant knowledge; and
- A back-end search process that is initiated by entering words into a text box, similar to using Google.

The context-aware enterprise search coupled with a common vocabulary for filtering information will provide an efficient and effective method for discovering and reusing existing knowledge assets.

Informal knowledge sharing

Informal knowledge sharing is a critical component of the proposed knowledge management initiative as it will draw upon previously undocumented information and support the transfer of tacit knowledge among employees. Three discrete but related components make up the informal knowledge sharing aspect of this initiative.

Expertise Location is a tool that will enable employees to easily identify experts within the company on a specific project or regarding a specific

customer. Currently, it can be time consuming to find an individual who has the relevant knowledge needed. Expertise location can pinpoint subject matter experts quickly and is particularly useful when seeking difficult to contextualize and codify experiential knowledge.

Establishing an effective expertise location tool will require the development of electronic profiles containing information such as: job role, title, contact information, skills, competencies, experience (including previous projects / assignments), education, language, and more. Where possible, the tool should update existing information contained in organization repositories automatically as this feature generally increases adoption and accuracy over time. Additionally, the tool should allow for manually updated content.

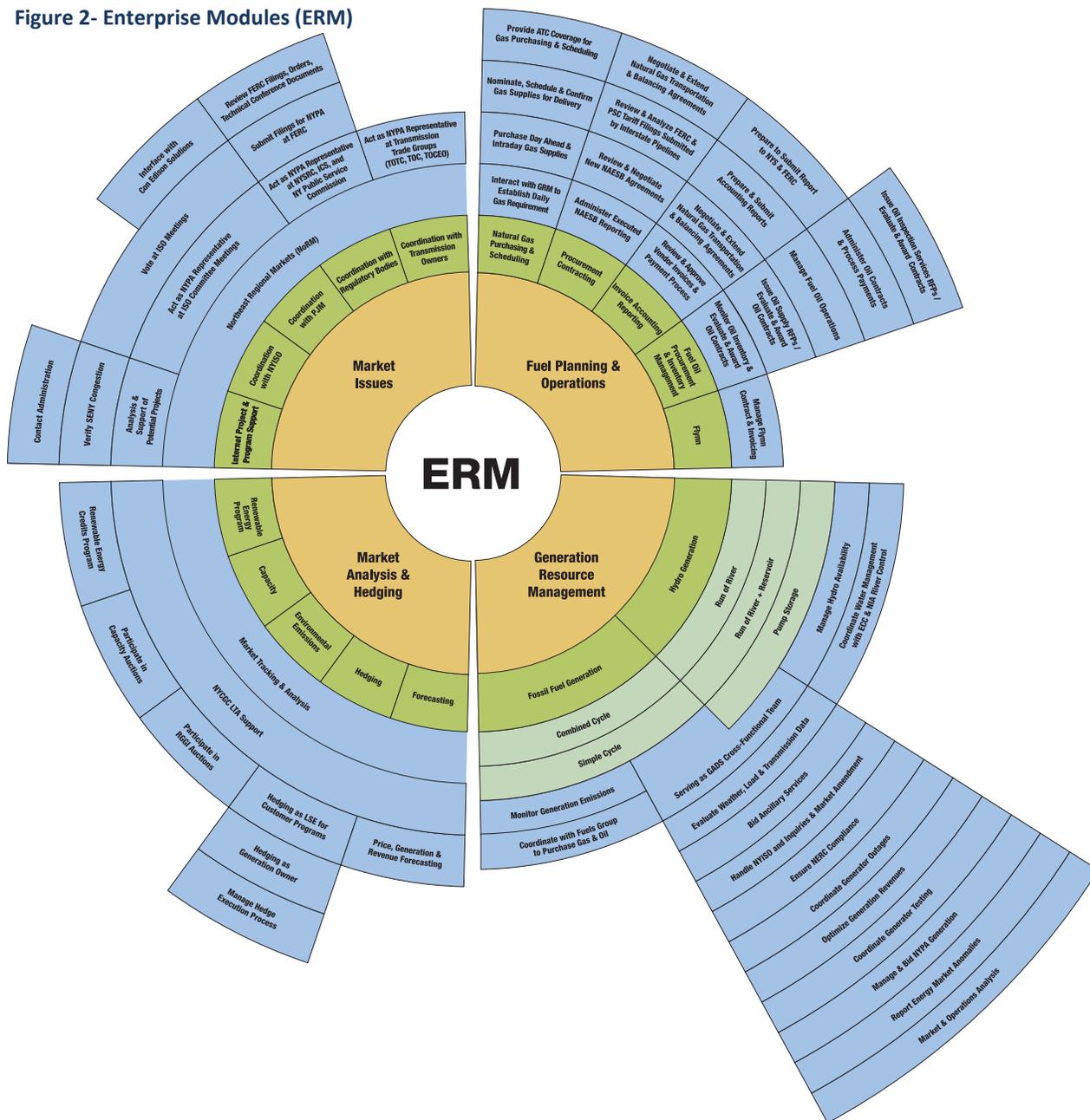
The expertise location tool will complement the efforts of the Workforce Planning initiative by maintaining an up-to-date account of current employee skills and competencies. It also can be used as a meaningful component of on-boarding strategies within each department and group.

Expertise location will have many uses across NYPA's departments. Often, what was done in a specific situation is recorded but supporting information about the decision was not captured. The ability to locate an individual with knowledge of the decision and its drivers can provide insight for current and future situations.

Enterprise Modules is an online portal that provides an interactive, diagrammatic representation of NYPA's business functions and the relationship that those functions have with each other. At the highest level, Enterprise Modules depicts NYPA's business units; however, it also allows users to drill down into each unit to view additional information, enabling users to discover new layers of information about group functions and relationships with other groups or business units.

This interactive tool will support employee on-boarding and serve as an educational resource for anyone at NYPA to learn more about particular departments or groups as it provides a high level overview of roles and responsibilities. It is important to understand how portions of the organization interrelate in order to support one another effectively.

Figure 2- Enterprise Modules (ERM)



Enterprise modules allows for more coordinated knowledge capture and knowledge dissemination as pertains to organizational functions. An initial effort is underway to develop and implement an Energy Resource Management (ERM) module. Since ERM has been repositioned within NYPA several times, NYPA’s Chief Operating Officer requested a tool that would help other areas within Operations understand how and why they interact with ERM. Figure 2 above depicts the ERM-centred enterprise module.

Communities of Practice (CoP) is the third and final component of informal knowledge sharing. These groups provide a structured environment where employees at all levels of expertise can share

knowledge on areas of shared responsibility. The primary goal of each CoP is to facilitate critical knowledge transfer on a proactive and continual basis rather than as a reaction to retirements or other events.

Implementing a proactive means of knowledge capture is aligned with the growing retirement concerns at NYPA. They will help circumvent inefficiencies due to extra time taken in locating relevant people and information and reveal best practices or mistakes that can be avoided going forward.

Recently, NYPA had to deal with the retirement of a Senior Executive who had been at the authority for over 30 years. After the retirement was announced,

the individual had to create a lengthy handoff document. This illustrates the risk of institutional knowledge becoming lost if a retiring employee is not conscientious or simply cannot recall every important detail that occurred during his or her tenure at NYPA. The importance of knowledge transfer and retaining talent speaks to NYPA's strategic plan and future needs. It demonstrates how the knowledge capture program is critical to NYPA's long term success and how proactive efforts like Communities of Practice can be instrumental to that success.

To ensure the value of these working sessions, the subjects for discussion will be prioritized with the appropriate subject matter experts secured to engage in these discussions. A pipeline of issues to be discussed will be maintained that reflects both emerging issues as well as areas that were particularly of interest at previous CoP sessions.

Communities of practice require rigorous structure and administration to be effective. Ultimate responsibility for the communities of practice will rest with the KMO, from which a representative will facilitate the Community and assist the administrator for each of the groups. The administrator's role and responsibilities will be to:

- Agree on the initial topics for discussion at the community of practice;
- Arrange the agenda and logistics for the face-to-face meetings;
- Maintain liaisons between the members of the community of practice;
- Review the activity of the community; and
- Provide progress reports to the community of practice sponsors (NYPA management).

The focal point of the CoP will be determined by the management of the sponsoring Business Unit in concert with the Community Administrator to ensure the relevance and value of the discussions that take place. The sessions themselves will follow a relatively structured format to ensure that the areas of interest are effectively covered during the session. Following each session, it will be important to reflect on lessons learned and apply these to future group meetings.

Bringing together representatives from across NYPA who have interest in similar subject areas but approach the topics from different perspectives will

allow each of the members of the community to attain a more holistic understanding of the issue. In addition, notes from the sessions will facilitate a more formal knowledge capture that can subsequently be shared via the enterprise-wide search tool.

The value of the CoP is not limited to exploring and sharing existing knowledge. It is also a mechanism for groups to explore technologies and knowledge that NYPA will need as it moves forward with the strategic plan.

Sharing of knowledge from staff soon to separate

As previously discussed, one of the key knowledge management concerns within NYPA relates to the potential for a loss of knowledge as a result of retirement or separation. One way to address this is to proactively capture and share knowledge from staff before they separate from the organization.

To support this element of the knowledge management initiative, in addition to CoPs, the KMO will develop a set of structured interview questions that are tailored to the specific roles of each business unit / department. These tailored questions can be further amended to reflect the specific role of the staff member set to separate from the organization. As part of an interview, a member of the KMO will elicit information from the staff member and capture it with formalized documentation. This documentation will then be categorized and stored in a knowledge repository and will be available to access via the enterprise-wide search tool.

As this process evolves, it will be extended to capturing information from members of staff with vital institutional knowledge.

Roll-out plan

A phased roll out of the recommended components of knowledge management makes the intended changes to the organization incremental. The projects targeted first can be completed quickly in order to demonstrate the value of Knowledge Management to the organization.

Phase 1 – Establishing Knowledge Management

This phase will begin by staffing the Knowledge Management Office (KMO). The first task of the KMO will be to re-establish the *Knowledge Capture* effort at NYPA, which had previously conducted structured interviews of key retiring employees.

The KMO will capture information from retiring key personnel and then structure the information for reuse. The re-evaluation and improvement of this program will be a separate project in Phase 3.

An effort will begin to identify appropriate software solutions to meet NYPA requirements for enterprise search since scope of the solution is well understood. This effort is actionable within a short timeframe and will demonstrate the utility of the Knowledge Management Initiative to the organization. This, in turn, will encourage participation in later projects. Once a software solution is identified, an appropriate implementation vendor will begin the engagement to install and integrate the search software across an identified subset of repositories and conduct initial training. The search tool will be in use by the end of Q3 2015, and the remaining identified repositories will be integrated by the end of Q1 2016.

Phase 2 – Leveraging Existing Knowledge Management Efforts

Work on Expertise Location will begin in Q2 2015, given that a potential software solution already licensed to NYPA has been identified (SharePoint – MySites). The KMO will conduct outreach to the business units and determine what information should be captured in the employee profiles and identify potential existing sources of information that may be utilized to pre-populate the profiles by Q4 2015. A list of projects that an employee has been involved with and skills already listed in SAP would be potential sources of information. It is important to note that development and implementation of Expertise Location will be coordinated with the Workforce Management initiative team since their initiative efforts may provide content for the employee profiles.

Enterprise Modules will build upon a project already underway within the Energy Resource Management (ERM) Business Unit. An approach for mapping, graphically representing, and creating content for functions and responsibilities within a business has been developed representing substantial progress toward implementation of this project. During Q2 and Q3 2015, the web-based user interface will be developed and the ERM modules finalized. In Q3 2015, the effort will be expanded to begin mapping and gathering content from the 26 additional departments within NYPA. The large scale of this expanded effort will require a limited number of

additional contract employees. The Enterprise Modules effort is projected to be completed by Q3 2016.

Phase 3 – Addressing the Need for Knowledge Sharing

The projects proposed for Phase 3 require significant effort to facilitate. If successful, these projects will require additional staff as they grow in scale and scope across the organization. Phasing these projects after the first three provide the greatest opportunity to evaluate success of the overall initiative and gauge future projects and staffing needs. The initial projects of the initiative will have discrete deliverables and each will require ongoing maintenance to preserve their relevance to the Authority. The projects in Phase 3 will continue as baseline work and will be a core responsibility of the KMO going forward.

Three initial Communities of Practice (CoP) will be established in the start of Q4 2015. The focus of each will be determined by the leadership of the business unit that receives benefit from the community, such as Power Generation, Energy Resource Management, or Enterprise Shared Services. The KMO will work with the Community Administrator (See Definition: Governance) to create the CoP charter setting the meeting structure, goals, and duration for each community. The benefits and effectiveness of the initial Communities of Practice will be evaluated by the KMO in Q1 2016 in order to inform the creation, direction, and scale of additional communities.

Starting in Q4 2015, the KMO will look to improve the existing NYPA *Knowledge Capture* process, which focuses on structured interviews of key retiring employees. The KMO will develop a more effective interface to intuitively navigate recorded retiree insights, ensuring dissemination and utilization by employees. Additionally, the KMO will standardize the procedure for the development of hand-off documents by the end of Q1 2016.

Suggested business model

The proposed business model is for three dedicated staff to work in the KMO upon inception. The function will not create revenues but will foster efficiencies in ways of working to limit duplication of effort and reduce delivery risk.

A key objective of this initiative is to embed ongoing knowledge management into day-to-day operations

at NYPA. The KMO will be the primary means through which this functionality will become embedded in organizational processes. However, this will be supplemented by the use of knowledge agents within each of the business units that will act as a primary point of contact for the KMO and receive periodic training on the various elements of the knowledge management initiative. The knowledge agents will be expected to disseminate this learning with colleagues in their business unit via various means. The combination of dedicated KMO staff supplemented with knowledge agents will ensure knowledge management has dedicated staff embedded throughout the organization.

Once the initiative has been fully implemented, it will be possible for staff to conduct searches on all relevant repositories across the organization to find the knowledge or documentation they need. In cases where the enterprise search tool does not locate the required information, staff will be able to use Enterprise Modules to understand where in the organization relevant information could be attained. Expertise Location functionality can also be used to locate the employee able to provide knowledge in the areas required. All of these elements will support the process of knowledge sharing. Established communities of practice and exit debriefings for separating staff will also help to ensure that knowledge not captured in an existing repository is documented and effectively shared.

Suggested governance structure

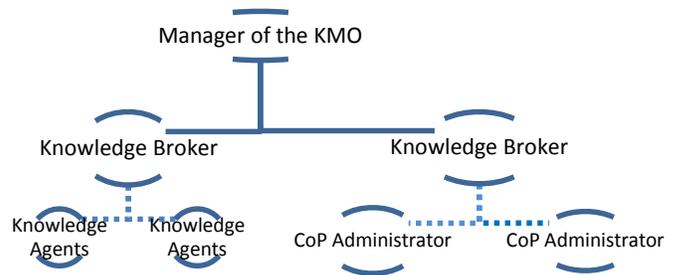
The KMO, initially comprised of three employees, will be responsible for day-to-day operation and the roll out of each of the components of the initiative. The team will be led by a manager with two direct reports who will act as knowledge brokers with direct responsibility for knowledge management in each business unit across NYPA.

The **knowledge brokers** will have constructive working relationships with the knowledge agents that are within each of the business units and will remain in regular and effective contact. This will ensure that the knowledge agents are aware of developments taking place and are able to disseminate this information throughout their business units to ensure the change is embedded.

The role that the **knowledge agents** execute will help to ensure the changes implemented under the knowledge management initiative are effective and that a partnership is effectively established with

each of the business units. It will also represent a professional development opportunity for both the KMO staff and the knowledge agents.

Figure 3- KMO Organizational Chart



Knowledge brokers will play a key role in facilitating the Communities of Practice component of the initiative. However, this component requires significant employee involvement in order to be successful. Each community will be led by a **community administrator** whom will be a well-respected peer to community of the topic identified. The administrator will be responsible for:

- Approving the draft practice submissions and applying the CoP criteria;
- Maintaining liaisons between the CoP and Process Leadership with regards to enhanced applications;
- Arranging the agenda and logistics for the face-to-face meetings;
- Reviewing the activity of the community; and
- Providing reports to the CoP sponsors (management).

As implementation of the initiative progresses, metrics will be implemented to support effective monitoring of success. Changes to the structure and governance of the team / projects to support the effective delivery of desired outcomes will be evaluated as needed and potential extensions that could build on successes will be considered.

Potential initiative scenarios and selection / prioritization criteria

As outlined previously in the *Initiative Scope* section, the initiative team will conduct a more detailed assessment of existing repositories to determine which should be incorporated within the enterprise-wide search. The decision in this area will be based on the value that NYPA will attain from inclusion of

these repositories.

Priority in selecting and phasing projects was given to those projects that:

- Enable quick successes with low overhead,
- Utilize existing software licenses to limit costs,
- Be actionable on the shortest timeframe, and
- Build on in-flight projects that can be integrated into the initiative reducing implementation time.

To establish the highest priority Communities of Practice, the KMO will conduct an enterprise outreach program involving visits to the various NYPA facilities and discussions with key representatives across business units to better understand where there would be value in future discussions.

BENEFITS AND REVENUE

High-level benefit description

The main objectives of this initiative include the capture of institutional knowledge from critical personnel, the reduction of inefficiencies while searching for information and subject matter experts, ensuring relevancy of information, and creating a culture of knowledge sharing while mitigating risks facing the organization.

By realizing these objectives, the knowledge management initiative will deliver numerous benefits. Business processes will be accelerated through the reduction of redundancies and the re-use of internal knowledge. NYPA staff will realize time savings in routine work and reduce the amount of time spent searching for information or subject matter experts. In addition to time savings, better access to information will also result in additional benefits such as:

- Reduce errors and mitigate risk via improved access to current and accurate information,

- Increase process understanding and efficiency,
- Improve employee competence and skill development,
- Increase innovation, teamwork, and agility through enhanced access to subject matter experts and improved collaboration, and
- Reduce onboarding time.

Consequently, NYPA will benefit from a more engaged, more motivated, and better skilled workforce. Empirical evidence from numerous studies supports the potential for knowledge management programs to deliver these types of benefits. The NYPA knowledge management initiative also targets additional benefits via:

- Proactive sharing of information to avoid institutional knowledge leaving the organization, and
- Efficiency in attaining/finding knowledge and minimizing duplication of effort.

The values in the following benefit tables reflect time savings extrapolated from our internal survey and industry research. Benefits were estimated using the following process:

- Surveys were distributed to knowledge owners and participants identified by members of the EMC. For each business unit there were as few as two or as many as twenty respondents with a median of nine.
- Respondents were asked to estimate time wasted per week searching for relevant information or identifying the appropriate personnel to contact.
- The hour ranges in the survey were weighted against the number of respondents per range and an average was determined; all responses were included.

Total Benefits (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
O&M - FTE (\$)	\$ -	\$ 392	\$ 1,097	\$ 2,038	\$ 2,508	\$ 3,136	\$ 3,136	\$ 3,136
Total (\$ '000)	\$ -	\$ 392	\$ 1,097	\$ 2,038	\$ 2,508	\$ 3,136	\$ 3,136	\$ 3,136

Total Benefits (\$ '000)	\$ 27,985
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Benefit assumptions

The benefits have been calculated based on an extrapolation of the survey results of 63 NYPA staff including managers, directors, and vice presidents. The weighted average of time lost searching for information noted by the respondents is 1.8 hours per week.

It is likely that this average underestimates the actual time lost to information searching. The American Productivity and Quality Center (APQC), a leading organization in knowledge management assessment, has conducted studies which find that employees spend about nine hours per week searching for information. This is the total amount of time spent searching for information and does not illustrate the portion of time actually lost during search. NYPA's sampling focused on higher levels of the organization; it can be expected analysis across all levels this would reveal even greater opportunity for knowledge efficiencies. For this reason, the initiative team balanced the APQC research with the NYPA survey in calculating the benefits related to times savings in the table below. NYPA will also realize benefits that are difficult to quantify, such as

risk mitigation and reduced duplication of efforts, making the benefits cited within this business plan conservative.

Confidence level of benefit realization

The following table represents the overall confidence that the specified revenue and benefits will be realized. The benefits and revenues enumerated above are based solely on the internal NYPA survey results collected.

Time saved in searching for information and reductions in duplication of intellectual assets will result in costs avoided where employees' time can be reallocated to new, higher priority tasks. The percentage of time in which this reallocation will happen provides for some amount of uncertainty in actual realized cost savings. In addition, there are many potential challenges and risks in regards to implementation and internal adoption associated with a large knowledge management initiative, which further adds to the conservative confidence level in benefit realization.

Table 5 - Benefits Confidence Summary

	Confidence Level		Confidence level	Benefit/revenue realization range
Total Benefits	Medium		Very high	+/- 5% of expected
	Low	High	High	+/- 10% of expected
Total Benefits (\$ '000)	\$ 22,388	\$ 33,582	Medium	+/- 20% of expected
			Low	+/- 30% of expected
			Very low	+/- 50% of expected

Table 6 - Risk to Benefits Realization			
Risk driver	Description of impact on benefit realization	Probability	Impact
Insufficient Executive Support	Executive support of the initiative is essential to demonstrate the importance and commitment of knowledge management through the organization.	Medium	Critical
Inclusion of content involving sensitive information may create vulnerabilities and the potential threat of external access to sensitive information.	Specific areas of the organization may not realize the benefits described due to security constraints around sensitive information.	Medium	Medium
Staff may not engage in projects (time constraints, concerns about information sharing, system difficulties, not bought into value of projects)	Critical knowledge may not be shared if employees aren't participating and contributing in sharing activities resulting in a greater need for knowledge capture. Information would continue to be time consuming to discover without properly	High	Significant

	classifying assets.		
Critical knowledge repositories not reached by search and taxonomy projects.	Critical information would remain difficult to discover and result in no time savings – status quo situation.	Low	High

FUNDING FOR THE INITIATIVE

Intended sources of funding

The Knowledge Management initiative will be funded using NYPA's cash reserves. Details on how the costs increase per year, and what is included, are provided in the Costs and Resources section of this business plan.

Source	Selected	Value (\$ '000)	Percentage of funds
Bond issuance	No	\$ -	0%
Cash reserves	Yes	\$ 3,639	100%
Third-party funds	No	\$ -	0%
Other	No	\$ -	0%
Total		\$ 3,639	100%

Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
NYPA cash	\$ 124	\$ 2,412	\$ 1,103	\$ -				
<i>Total annual cost</i>	<i>\$ 124</i>	<i>\$ 2,412</i>	<i>\$ 1,103</i>	<i>\$ -</i>				

Total NYPA cash (\$ '000)	\$ 3,639
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COSTS AND RESOURCES

Initiative cost and resources (i.e. costs and resources associated with implementing the initiative)

Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Internal labor	\$ 72	\$ 567	\$ 916					
Training, Outreach, Advertising	\$ 10	\$ 80	\$ 75					
Search software licensing, support, and maintenance		\$ 1,320	\$ 112					
Taxonomy development contracting		\$ 81						
Software development contracting		\$ 144						
Department analysis/knowledge capture support contracting	\$ 42	\$ 180						
Total annual O&M	\$ 124	\$ 2,372	\$ 1,103	\$ -				

Total O&M costs HQ/OH/Other (\$ '000)	\$ 3,599
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Table 10 - Capital expenses (\$ '000)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
Physical assets		\$ 40						
Total annual Capex	\$ -	\$ 40	\$ -					

Total initiative Capital expenses (\$ '000)	\$ 40
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Total initiative costs (\$ '000)	\$ 3,639
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Table 11 - Resources (FTE)								
Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
IT								
Business	1	3	5					
Technical/(Engineer)								
Other								
Total annual FTE	1	3	5	-	-	-	-	-

Initiative cost assumptions (i.e. cost associated with implementing the initiative)

In developing the cost estimates presented in this business plan, the following assumptions were made:

First, costs identified are only the costs of the KMO staff and associated systems. The costs do not incorporate the time and resources of the business unit staff that will support implementation of the initiative and engage in the Communities of Practice.

Second, it is assumed the knowledge management initiative will be fully implemented by the end of 2016 and at that time, the KMO and associated

initiatives will be considered business as usual. For these reasons, the implementation cost tables identify costs for the years 2014 to 2016. The remaining costs will be incurred on an ongoing basis from 2017, and are captured in the post-implementation cost table that follows.

Third, the costs included for the development and implementation of each system envisioned under the knowledge management initiative are based on initial quotes obtained from potential vendors, and will be further clarified when specific products are selected.

Post-implementation costs and resources (i.e. incremental costs and resources associated with running/maintaining the solution post-implementation)

Table 12 - O&M costs Headquarters, Overhead and Other									
Category	Frequency	2014	2015	2016	2017	2018	2019	2020	Post 2020
Internal labor	Annual				\$ 1,091	\$ 1,266	\$ 1,266	\$ 1,266	\$ 1,266
Training and outreach	Annual				\$ 45	\$ 30	\$ 30	\$ 30	\$ 30
Software Maintenance	Annual				\$ 112	\$ 119	\$ 113	\$ 120	\$ 114
Total annual Site O&M		\$ -	\$ -	\$ -	\$ 1,248	\$ 1,415	\$ 1,409	\$ 1,416	\$ 1,410

Category	Frequency	2014	2015	2016	2017	2018	2019	2020	Post 2020
Physical assets	2 years				\$ 40		\$ 40		\$ 40
Total annual Capex		\$ -	\$ -	\$ -	\$ 40	\$ -	\$ 40	\$ -	\$ 40

Category	2014	2015	2016	2017	2018	2019	2020	Post 2020
IT								
Business				6	7	7	7	7
Technical/(Engineer)								
Total annual FTE	-	-	-	6	7	7	7	7

Post-implementation cost assumptions (i.e. cost associated with running/maintaining the solution post-implementation)

The following assumptions were made in developing the post implementation cost estimates:

To maintain enterprise support and long-term validation of the solution, training and outreach will be conducted periodically throughout each year.

Annual software maintenance cost is based on the 20% of user license fees.

The staffing levels of the KMO will be evaluated at the end of 2016 to determine if they are adequate

in relation to the numbers of Communities of Practice, Expertise Locations and Enterprise Modules and planned projects for 2017. The cost tables show an increase of two FTEs by 2018 based on increasing Knowledge Management scope and KMO staffing levels at other organizations (IBM and Halliburton). Lastly, bi-yearly server upgrades are scheduled ensuring search hardware maintains optimal performance.

Confidence level of initiative and post-implementation costs

The following table represents the overall confidence that the cost levels will be met.

Table 15 – Costs Confidence Summary

	Confidence Level	
Initiative costs	Medium	
Post-Implementation costs	Medium	
	Low	High
Total initiative costs (\$ '000)	\$ 2,911	\$ 4,367
Total annual post-implementation costs (\$ '000)	\$ 1,144	\$ 1,716

Confidence level	Benefit/revenue realization range
Very high	+/- 5% of expected
High	+/- 10% of expected
Medium	+/- 20% of expected
Low	+/- 30% of expected
Very low	+/- 50% of expected

Comments

The initiative and post-implementation costs include software implementation and annual maintenance for a single, recommended product in enterprise search, as well as ongoing costs for staffing of the KMO. The initiative team has included the costs for the preferred product based on current enterprise needs and breadth of technology. Additional search product vendors were reviewed; however, the products have less desirable licensing models and impose restrictions on quantity of content.

MARKET TRENDS

Overview of market trends

Many businesses are taking steps to optimize and simplify their operations in order to drive efficiency across their organizations. They are targeting the elimination of redundancies and the improvement of processes and technologies across organizations. Enterprise search tools and taxonomies are in rapid deployment throughout many industries. With the dramatic changes in the energy industry, energy

companies are becoming information businesses. The industry is recognizing the threat of lost tacit knowledge from retirements and has begun to take steps to capture and make this content available.

Other industries are also pursuing knowledge management. Accenture challenged itself to create a sustainable competitive advantage by addressing its knowledge management issues. Expecting digital information to rapidly increase and storage requirements to become more even more demanding, Accenture was able to streamline its operations to better meet customer needs. The reduction in manually updated files and number of servers to support Accenture’s growing business illustrated the quantitative value of their knowledge management efforts.

Expected impact on customer segments

Better access to knowledge and relevant information by customer-facing representatives, may lead to improvements in customer service in terms of response time to inquiries and the accuracy of information provided. Deeper understanding of customer circumstances will permit NYPA staff to provide guidance to customers and design effective energy solutions for their needs.

A potential extension of the initiative would be to make electronic assets available via customer facing portals. This would complement the Customer Solutions Initiative by providing enhanced access to knowledge for our customers as well as internal NYPA staff.

ORGANIZATIONAL IMPACT

Overall degree of change

The implementation plan for knowledge management is constructed to make optimal use of existing resources and introduce minimal disruption to work processes. A collaborative approach between the KMO and the business units will ensure that the solutions implemented address requirements and effectively deliver in line with needs.

Once implementation begins, the KMO will provide targeted training to knowledge agents across the business units. In addition, the KMO will conduct regular outreach activities to attain feedback on the implementation and potential changes that could be made to improve adoption.

The KMO will provide formal and informal routes of communication including an informational website on knowledge management components that will also showcase success stories illustrating how those components have been effectively applied to support knowledge capture, sharing, and use.

The impact of change will be lessened where business units have already embraced some of the tenets of knowledge management. The Operations Business Unit is working on taxonomy and has knowledge oriented programs such as Asset Management, Asset Investment Planning, Configuration Management, and Process Integration.

Table 16 - Internal impact overview		
Business Unit	Description of impact	Type and Level of Impact
Internal Audits	Improved access institutional knowledge may improve efficiency of investigations.	Positive - Low
Business Services	Improved utilization and search of existing content databases.	Positive - Low
Enterprise Shared Services	Significant interaction with IT during implementation is expected, but the improved ability for employees to self-identify information is expected to be a net benefit.	Positive - Medium
Law	Improved coordination of staff and efficiency of access to institutional knowledge on past legal actions.	Positive - Medium
Economic Dev. & Energy Efficiency	Improved coordination and efficiency of Customer Facing staff in obtaining correct information, and contacting informed staff when issues arise.	Positive - Medium
Operations/ Transmission	Build on existing efforts to improve access and maintenance of Standard Operating Procedures, and	Positive - Medium

	improve access to institutional knowledge.	
Governmental & Communications	Improved utilization and search of existing content databases. (I.e. Merlin)	Positive - Medium

Required skills

Knowledge Management spans both technical implementation as well as cultural and organization change. To ensure full implementation, a mix of staff will be required including the KMO Manager, Knowledge Brokers, and consultant personnel as necessary.

The nature of the initiative will require these members of staff have a variety of skills including previous NYPA knowledge management related project experience as well as any other knowledge management skills. Internal NYPA knowledge is beneficial, so it is preferable that qualified internal personnel fill some of the positions.

The **Manager** of the KMO will be responsible for ensuring the organization maximizes the value it achieves through knowledge. Responsibilities include managing intellectual capital and Knowledge Management practices in the organization.

- Developing an overall framework that guides knowledge management
- Actively promoting the knowledge agenda within the organization
- Overseeing the development of the knowledge infrastructure
- Facilitating connections, coordination, and communications
- Measuring the impact of knowledge management on the business
- Integration architecture development
- New technology evaluation
- Product and vendor evaluation
- Requirements management
- Risk/return analysis
- Software licensing
- Stakeholder management

The **knowledge broker** is an intermediary that aims to develop relationships and networks between producers and users of knowledge by providing linkages, knowledge sources, and knowledge itself.

They will engage business leaders in the identification and codification of critical business knowledge within their silos, and facilitate knowledge capture through knowledge teams.

- Assessing barriers and establishing access to knowledge
- Learning critical knowledge areas, electronic content management systems (ECM), and business processes (i.e. knowledge capture)
- Facilitating individual and organizational capacity development for knowledge use
- Implementing knowledge in new settings
- Maintaining knowledge through its lifecycle

It would also be beneficial for staff involved in specific components of the initiative to have expertise in the following areas.

Enterprise-wide search and taxonomy: This task primarily requires project management skills as implementation will be guided by consulting services. However, the sub initiative is technology related and business focused which will require personnel with strong interpersonal and communication experience as well as negotiation and facilitation experience. It would also be a plus if these staff members had an IT aptitude to ensure success.

Expertise Location and Enterprise Modules: These are software technology solutions that are centered on roles and people within the organization. Both projects will benefit from staff with existing IT skills that can be augmented with developer contractor resources as necessary.

Communities of Practice: These are primarily facilitation projects aimed at sharing knowledge directly via employee engagement. This requires KMO staff to have the ability to motivate community members, drive change, and facilitate experience and best practice discussions. For each of the knowledge areas addressed, the team will receive support from subject matter experts working in the relevant business unit(s) who will bring project-specific expertise as well as acting as agents of knowledge.

Table 17 - Skills overview			
Business Unit	Skills required	Current status	Suggested action
All business units	knowledge agents and CoP Administrators with strong communication skills will need to be identified to facilitate implementation	Existing	Train

RISKS

Risks to NYPA as a result of implementing the initiative

Table 18 - Risk overview						
Category	Description	Probability	Impact	Suggested actions	Owner	Liaison
Operational	Executive Support	Medium	Critical	Demonstrate benefits of Knowledge Management projects and overall initiative	Executive Sponsor	Strategy Management group
Operational	Dedicated KMO	Low	Significant	Ensure hired team members have required skills to embrace and use project tools and are prepared to facilitate organizational changes	Executive Sponsor	Human Resources dept.
Operational	Knowledge Management systems and tools not maintained and updated	Medium	High	Illustrate benefits of maintenance support and updated knowledge	KM group manager	IT dept.
Operational	Lack of participation in Communities of Practice	Medium	High	Demonstrate benefits of CoPs	KM group manager	TBD
Workforce	Knowledge Management initiative and projections not adopted throughout NYPA	Medium	Critical	Advocate executive support, communicate value of knowledge management, demonstrate benefits through outreach programs, and ensure KMO works directly with business units to gain support for the initiative	KM group manager	Executive Sponsor
Public	May see costs may outweigh actual benefits achieved in addressing knowledge loss at NYPA	Medium	Medium	Show how Knowledge Management supports other initiatives and, alongside them, supports the strategic vision for NYPA's future; Communicate how KMO is an investment with a demonstrable positive return; Develop metrics to demonstrate how anticipated costs and benefits were actually realized	KM group manager	Strategy Management group

The risks associated with the initiative can be grouped into the following key areas:

Project implementation: The enterprise wide content search tool will interface with numerous existing content repositories. Making distributed content available for index and search from a single location is a highly complex technological challenge. It will be critical for senior leadership to commit both the time and resources required to successfully deliver and maintain the technology components of the initiative. In addition, the implementation team must have strong capabilities in the use of these tools, and be well versed with the organizational change requirements.

Adoption across NYPA: Employees across NYPA may have a negative perception of the initiative as a means to reduce personnel once knowledge from their role is discoverable, which may contribute to a resistance in storing content in knowledge repositories. Employees may also view the classification steps required by the taxonomy as unnecessary or as additional work without benefit. There is also the risk that employees may not contribute or participate in Communities of Practice or provide updated content and function descriptions for the Enterprise Modules. These risks underscore the importance of executive leadership support, communicating the core values of knowledge management, demonstrating the benefits through outreach programs, and ensuring the initiative team works directly with departments to enable strong support for the initiative at all levels of the organization.

Benefit Realization: There is potential for full scale benefits described herein to not be realized within the organization. It will be important to have the proper metrics in place to measure and understand the value each KM program provides and articulate that back to the organization.

Maintained Engagement: With Expertise Location and the Enterprise modules system, the commitment of the Business units to keep these systems up to date is critical to their success. Should this not occur, these systems can quickly fall into disuse.

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