In 2004, Atlantis Systems International was a company facing hard times following the decline of its industry after the 9/11 terrorist attacks. Morale was low, attrition was high, R&D budgets had evaporated and uncertainty and distrust was rife. Here Blake Melnick presents a case study of the firm's transformation into a knowledge-centric organization, where the use of expert learning patterns, professional development programs, custom technology and a strong emphasis on core values has powered the company forward and made it one of the fastest growing technology firms in Canada.

USING KM AS A FOUNDATION FOR CHANGE AT ATLANTIS

Transforming into a knowledge-centric organization

By Blake Melnick, chief knowledge officer and chief operating officer, Atlantis Systems International

Blake Melnick
is chief operating officer and chief knowledge officer at Atlantis Systems International. His background is in education and business with a specific emphasis on e-learning and the knowledge sciences (knowledge management, knowledge mobilization and knowledge building).

A knowledge-centric organization is one where "knowledge work" is the central activity of the people within the organization. Explained another way, it's an organization that places greater priority on "ideas" than on "tasks." People within the organization realize that ideas lead to continual improvement and unexpected innovation whereas tasks lead to a fixed or finite outcome that's usually predictable at the outset.

The following article is a case study about how Atlantis Systems has applied KM principles to increase profitability, encourage growth, accelerate innovation and build a culture geared towards continually improving what we do and how we do it.

It's important to remember, however, that every organization is unique, and there's no "one size fits all" approach to KM. Creating a knowledge-centric organization is both difficult and time consuming and the return on investment is often not apparent for many months or, if you are a large organization, many years. In addition, it's an ongoing process and while Atlantis has come a long way since 2004, we have by no means reached our final destination.

The start of the road
KM practices were adopted at Atlantis to serve as a catalyst for rebuilding the company after September 11, 2001. Following that event, the company fell on

difficult financial times. In 2004, Atlantis changed ownership and the new CEO, Andrew Day, a strong supporter of KM practices, hired me as chief knowledge officer and chief operating officer in order to apply KM principles to build initiatives to support the internal change management process. In addition, Andrew had a vision that saw KM as a differentiator in our market.

The landscape in 2004
When the new management took over the company, Atlantis was characterized by an all too familiar situation:
- High employee turnover and loss of valuable intellectual capital (IP).
- Financial instability.
- Rocky relationships with key customers.
- A culture of uncertainty, characterized by a lack of trust.
- Lack of leadership.
- Lack of unifying vision.
- A core of talented, dedicated employees.
- Valuable intellectual capital and excellent quality control.
- An established history of producing excellent products.

KM at Atlantis in 2006
Atlantis now employs a knowledge-building model focused on continual improvement and performance enhancement. We place people and their ideas at the center of the practice, rather than technology. By employing an innovative approach to training, combined with a number of flexible technologies

designed to support the learning and the knowledge-building process, we're beginning to see the following return on investment:

- *Reduction in cost and time to train:* New employees have access to a variety of knowledge bases, which they can utilize to increase their knowledge of our company, its people, our processes as well as past project exemplars. We have created the "Knowledge Matrix" as part of the "Knowledge Xchange." The Knowledge Matrix is a tool that employees use to identify expertise (skills, knowledge, etc.) within the company. They know who they can to go to for help.
- *Reduced time to market for products and services:* Capturing IP and positioning this IP for re-use is critical. Employees can access past projects, move these into a team collaborative space and re-use and re-purpose the material in a new context.
- *Reduction in redundancy and in the repetition of past mistakes:* Because we capture process as well as product we can track an outcome (for example a proposal or design plan) back to its inception. We've added the why, who and how to the what.
- *Retention of IP:* Providing a variety of technology supports combined with social practice ensures we capture everything related to a given project.
- *Capture and dissemination of "tacit knowledge" – know-how gained through experience*: Accomplished through a variety of means – targeted professional development programs, mentoring, lunch-and-learn sessions (these are described in greater detail below).
- *Increased performance in the field*: Accomplished through a performance-management system.
- *Protection against "greyout":* The loss of organizational knowledge through attrition.

Our model is guided by patterns of expert learning:
1. Employees place ideas, not tasks, at the center of learning, knowledge building and work.
2. Employees take ownership or agency over their ideas and their learning (authorship).
3. Employees are driven by "the need to understand" – progressive inquiry (building on the ideas of others).
4. Employees transfer existing knowledge to new situations in order to produce new knowledge (transportable ideas – new contexts).
5. Employees seek out other experts (residing both inside and outside the organization) for their knowledge and add this to their existing knowledge base. (Published ideas, lunch-and-learn sessions, professional development.)
6. Employees identify the source of their understanding and by doing so also identify the

KEYPOINTS

- A knowledge centric-organization is one where "knowledge work" is the central activity of the people within the organization.
- Creating a knowledge-centric organization is both difficult and time consuming and the return on investment is often not apparent for many months or, if you are a large organization, many years.
- Atlantis now employs a knowledge-building model where people and their ideas are placed above technology. This has been done with an emphasis on idea ownership and responsibility, professional development, mentoring and motivation compelling knowledge transfer techniques and core values.
- Already for Atlantis, notable returns on investment include a reduction in cost and time to train and reduced time to market for new products and services.

source of possible misconceptions that exist in their knowledge base. (Scaffolds, outside resources.)
7. Employees see ideas as living things. They're fluid, continuously returned to, revised and reconstructed as new knowledge is acquired. (Continuous editing and re-purposing of ideas.)
8. Employees work at the edge of understanding: They're driven by their need to understand more. (Rising above their current level of understanding.)
9. Employees look for opportunities for symmetric knowledge advancement or win/win opportunities. (Advancing personal knowledge while advancing company knowledge.)
10. Employees take responsibility for advancement of their entire community whether it's departmental, organizationwide or global. (Construction and reconstruction of the environment to incorporate new information and knowledge.)

So how did we get to this stage?

Step 1: Establishing commitment from key influencers and stakeholders
In June 2004, incoming president and CEO, Andrew Day, chairman of the board, Don Hathaway, and I held a three-day strategy session with the existing senior management team. We asked the following five questions:
1. How do we rebuild trust and get people to share what they know for the benefit of the company?
2. How can we identify and support the knowledge needs of every employee within the company?
3. How can we help direct knowledge creation to improve the overall performance of the company?
4. How will the creation of a knowledge centric organization benefit the customer?
5. How would you like to be perceived as a company, both by the employees and by the customers? Specifically, we were interested in establishing a set of core values upon which to rebuild the company.

Atlantis core values
1. Quality: We strive to exceed our customers' expectations
2. Innovation: We use responsible creativity to craft the best solutions
3. Integrity: We act ethically in our professional endeavors
4. Accountability: We take responsibility for our actions and our commitments
5. Teamwork: We believe in spirited teamwork

Emphasizing company values

Core values need to be simple statements that can be embraced and acted upon by every employee regardless of their role within the organization. They should be accompanied by short clarifying statements and they should be broad enough to travel to any part of the world. The following is our definition of core values:

" *Core values are the embodiment of how we see ourselves as a company and how we wish to be seen by our customers. They're not platitudes, or posters on the wall. They are the fabric of our culture and the benchmark of excellence for everyone at Atlantis.*

Developed with input from employees and customers, they help us remain focused on providing excellent products and services, as we strive to continually move beyond best practice in everything we do."

I cannot overstate the importance of core values in creating a knowledge centric organization and while it's a relatively common practice, I have observed that many organizations create too many values and often the values they select to represent their organizations are inflexible and are exclusive or targeted to select individuals or groups within the organization.

Spread the word

Our core values (see sidebox, above) are featured

everywhere; throughout our offices in Canada and the US; on our website and on our business cards. They are our brand.

Step 2: Engaging key stakeholders

The next stage was to build collective responsibility for growth and establish some benchmarks with which to measure our progress.

From the initial strategy sessions in 2004, we needed to find some tough problems to solve in order to show our commitment to our major stakeholders – the employees. We understood that in solving tough problems, we would also solve easy ones.

Given the climate of distrust at Atlantis we needed to find a flexible means to solicit feedback from as many employees as possible as well as providing a safe environment where employees could be honest in their opinions.

We created a survey (to be answered anonymously) and sent it out to all employees within the company asking them to identify the most important challenges Atlantis needed to address in order to become a great company. The top three answers from each employee were collated (see Figure 1, below left).

We then created a collaborative discussion environment to flesh out the most pressing issues:
1. Morale.
2. Increasing sales of existing products and services.
3. Delivering on time and on budget.

We selected three members of the senior management team to act as facilitators and gave employees two months to articulate the problems and share knowledge around these problems with an end goal of establishing actions to solve these three problems.

At the end of 2005, the results of the same survey showed a pronounced shift in priorities indicating the company had done an effective job addressing the concerns from 2004.

The results indicated a shift away from hard measurables, for example sales, to softer measures such as empowerment.

Measure, manage and measure some more

It can't be overstated. A large scale KM initiative takes time and results are often difficult to discern. Our approach has been to continuously solicit feedback from all stakeholders (employees, customers, shareholders, partners). Specific instruments include:
1. *Quarterly town halls:* Provide a venue for employees to openly discuss issues and concerns, ask for clarification and to challenge senior

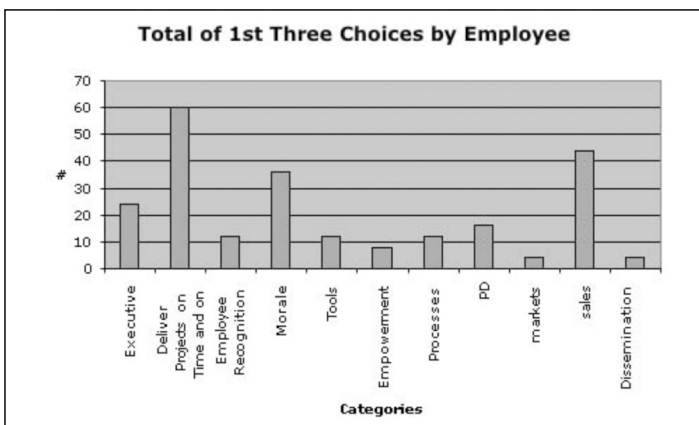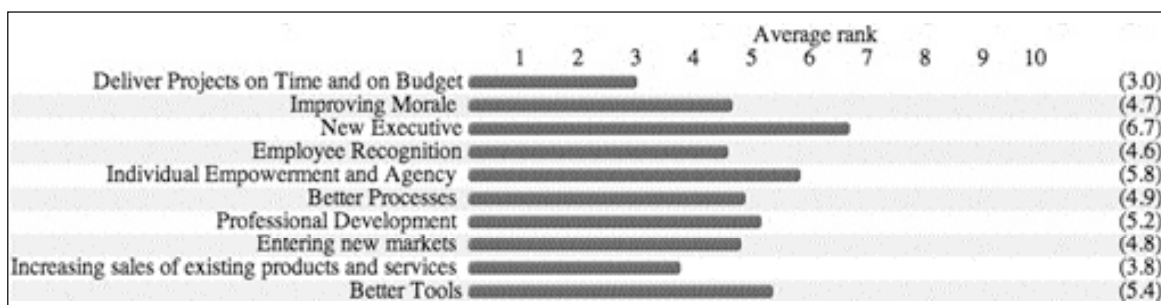Figure 1. The results of an anonymous survey highlighted employee concerns

Figure 2. The 2005 survey demonstrated a shift in employee priorities

	Average rank	
	1 2 3 4 5 6 7 8 9 10	
Deliver Projects on Time and on Budget		(3.0)
Improving Morale		(4.7)
New Executive		(6.7)
Employee Recognition		(4.6)
Individual Empowerment and Agency		(5.8)
Better Processes		(4.9)
Professional Development		(5.2)
Entering new markets		(4.8)
Increasing sales of existing products and services		(3.8)
Better Tools		(5.4)

management decisions.

2. *Employee/customer surveys:* Delivered quarterly, results are shared with employees, customers and the board of directors. All data is captured allowing us to chart our progress over time and between surveys.

3. *Activity analysis tools:* As part of our KM system, these tools are used to track idea development and provide a means of identifying thought leaders in our organization.

4. *Collaborative customer-centered knowledgebases:* Provide ubiquitous access for our customers to tell us about any current issues they are having related to in-house work; to tell us about both their short-term and long-term needs and to provide us with valuable industry information. More than that it creates shared accountability between Atlantis and our customers.

5. *Ombudsman:* The company "Ombudsman's" sole responsibility is to talk with employees, listen to them and document their concerns. He also serves as a conduit to senior management, ensuring priority concerns are addressed in a timely manner by the appropriate member of the senior management team. The ombudsman's reports allow senior management to identify themes and threads – a barometer of the cultural health of the company. In the most recent employee survey (October 2006), positive perception of the ombudsman's role had increased.

Change the structure to support desired outcomes

From experience, KM initiatives fail because the structure of the organization is not conducive to achieving the desired outcomes.

A knowledge-centric organization must have a knowledge-centric culture. This needs to be reflected in the design of the organizational structure and must be supported by key social programs.

In 2005, we revamped the organizational structure at Atlantis. In 2004, our largest

department – more than 80 engineers – was managed by a single individual. While this person was highly capable and has become an exemplary leader within the company, employees and knowledge work suffered under this structure. Employees simply couldn't get enough of this manager's time.

Changing the organization's structure has helped to embed KM practices in key operational areas of the company. In the case above, we restructured the engineering department into 12 professional practice units. Each unit is presided over by a Unit Leader (the first level of management within the company). Unit leaders are responsible for providing for the professional development, mentoring and knowledge needs of their team. This allowed for a greater degree of autonomy for individuals within the units, created a succession plan for the company and allowed the previous manager to provide strategic leadership over the entire department. In addition, he was able to relate the knowledge captured to specific disciplines and configure the Knowledge Xchange to support cross-pollenization of knowledge between the units.

Personal and corporate professional development

A personal employee professional-development program is an excellent way to bring new ideas, information and knowledge into your organization. In addition it's key to keeping good employees engaged and has a direct impact on an organization's ability to retain talent.

Atlantis allows employees to allocate three percent of their base salary, every year, for professional development. In addition, employees are allotted five calendar days (company time) that they can use for these activities. The model is flexible in that it allows employees to combine their three percent with other members of their practice unit if the activity is considered a priority.

In exchange for this, employees are required to contribute what they've learned to the collective

"TECHNOLOGY IS NECESSARY TO SUPPORT THE KNOWLEDGE WORK OF ANY ORGANIZATION, BUT THE LAST THING YOU WANT TO DO IS SHOEHORN YOUR KM MODEL INTO OFF-THE-SHELF TECHNOLOGY"

knowledge base of the company through writing learning reports and adding them to the KX and by holding lunch-and-learn sessions for their peers.

Corporate sponsored professional development

In addition to the personal professional development program, we also provide a corporate professional-development program. This program is developed with direct input from the management team and covers broader issues, for example leadership, or departmental training programs. Once again, these needs are identified and captured in the Knowledge Xchange.

Mentoring

The mentoring program should extend to all employees. The basic tenet is to provide a mechanism for an informal interchange of knowledge and expertise between senior and junior staff, in which help and advice for other than the normal day-to-day tasks and activities can be sought and suggestions and solutions offered.

While many companies have some form of mentoring program in place, they can be ineffective and difficult to sustain.

When we asked employees what they wanted the mentoring program to be, we found there were two distinct needs:

1. a functional, professional, skill-based mentoring program; and
2. a soft skills coaching program.

In order to ensure continuance and to enhance value of mentoring within the company, we designed a less structured, more organic approach to mentoring.

Key employees, by virtue of either their position in the company or their expertise, serve as mentors for the skills element of the program. Senior management serves as coaches to assist employees in the development of soft skills as well as to provide career guidance.

At the outset, mentors and coaches were asked to enter a personal profile into a mentoring knowledge-base. In their profile they describe their background, skills and mentoring/coaching interests. Employees are asked to review the profiles and make contact with the person they would most like to access for help. In this way, we ensure the relationship between mentee and mentor is one of choice. This approach also allows the mentoring process to be fluid. In other words, employees have the option of developing one-off relationships or long-term ones. In addition, it provides employees with flexibility to shift mentors in accordance with changing needs.

Performance measurement

Performance feedback is critical to the notion of continual improvement. Equally important is that feedback comes from multiple sources: peer, self, manager and report.

The criteria selected for review should reflect the type of organization management is trying to create. In our case, we chose to use our core values as key competencies and with input from all the management, come up with specific behaviors for each of the competencies. In this way, we're reinforcing the KM practice and our desired knowledge-centric model. Data from all performance reviews are captured and aggregated in our online performance-management system. Reports are dynamic and performance is tracked over the course of an employee's career at Atlantis.

The Knowledge Xchange (KX): useful technology

Technology is necessary to support the knowledge work of any organization. However, it's important to create the right mix to address the specific knowledge needs of *your* organization. The last thing you want to do is shoehorn your KM model into off-the-shelf technology that wasn't designed for the purpose in which you intend to use it.

Another pitfall to avoid is trying to use disparate tools that can't be integrated into a complete system that will grow along with your organization.

Figure 3. The contributors to the Knowlede Xchange
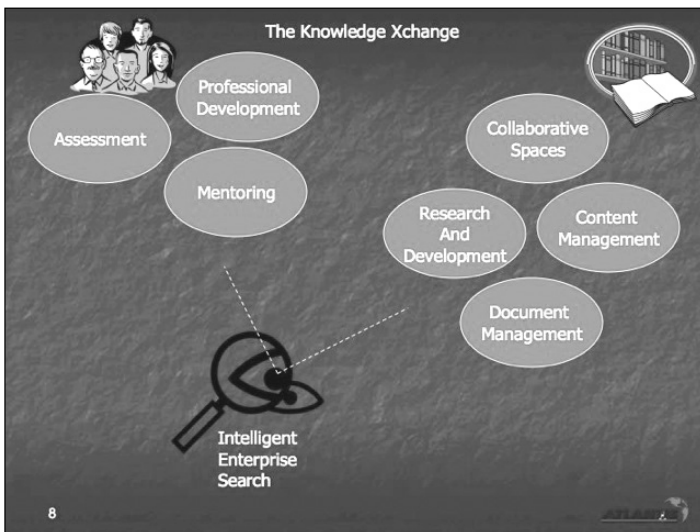
For these reasons, we've chosen to use open source technology to design and build the Knowledge Xchange.

Critical success factors

As stated at the outset, building a knowledge-centric organization is a great challenge. Lessons learned over the past three years have pointed to a number of critical factors that can either accelerate or restrict the process.

To summarize, here are 13 factors which we deem critical to success:

1. *Leadership*: Build capacity by identifying champions within your organization as soon as possible. These are the people who will take your ideas to the operational level.

2. *Corporate support at the highest level:* As the CKO, I report to an extremely enlightened president, who supports the value proposition of a knowledge-centric organization and is willing to be a champion.

3. *A broad vision and a clear purpose*: You need to engage employees at the outset and make them part of the change process.

4. *Clearly defined objectives*: You need this to build the plan.

5. *A KM plan*: A detailed plan with deliverables and milestones that considers all functional units within your organization.

6. *Implementation*: KM needs to be embedded in the work of the organization and it's value widely accepted. If it's seen as an add-on to employees' daily tasks and activities, you will encounter resistance.

7. *Performance indicators:* Identify benchmarks of success and continually measure your progress against them. You'll need to continually point to improvement in order to maintain ongoing support from the senior management.

8. *Resources (technology, people etc.):* Without adequate resources you are doomed to failure. This kind of initiative takes dedicated effort by a lot of people.

9. *Technology*: It needs to be aligned, robust and integrated and it will need to evolve with your organization.

10. *Structure and culture*: You'll need to design a KM model that is aligned with your current organizational structure and culture. If neither can support the KM model, you'll have to make changes to both.

11. *Core values:* Values are a large part of every organization's brand. Use them to support your KM plan and use them to guide behaviors and practices that align with your objectives.

12. *Professional development*: Provide learning

Figure 4. Year-on-year results from 2004-2006 show hard and soft measures. The improvements and additional third-party recognition can be directly attributed to the KM-focused change program

	2004	2005	2006
Corporate Revenues	15,984,000	33,772,000	Unavailable
Workforce Size	102	152	200
Turnover	Approx 15%	3.2%	Unavailable
Morale Improvement	55%	78% (23% improvement over 04)	81.1% (3.1% improvement over 05)
Customer satisfaction/100%	45%	80%	Unavailable
R&D	$0	1.7m	2m
Markets	Aerospace	Aerospace, Energy	Unavailable
3rd party Endorsements	0	Deloitte – Fast 50 - Fastest growing technology companies in Canada	- QMI audit 100% score, with no non-conformities in both Aerospace and Nuclear Standards - Deloitte Fast 50 - E&Y – Entrepreneur of the Year – Finalist - Boeing Preferred customer – 24 consecutive months of on time and on budget

opportunities for employees that are of value to them and support your KM model.

13. *Rewards and recognition*: If you want employees to share knowledge willingly and contribute what they know for the benefit of your organization you need to recognize and reward them for the effort. Consider including desired behavior in your performance reviews.

Onwards and upwards

The results speak for themselves. In our recent employee survey completed October 27, 2006, 94.8 percent of employees would recommend Atlantis products and services to a friend or business acquaintance; 92.2 percent of employees would recommend Atlantis as a "good place to work" to a friend or business acquaintance; and 80 percent of employees believe that morale has improved since the last survey.

The next challenge for Atlantis (to be featured in a future edition of *KM Review*), concerns how we are migrating our KM practice from an internal cost center to an external profit center: avoiding "greyout" and knowledge loss through attrition. KM REVIEW

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