Knowledge Capture at SMUD

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SMUD at a Glance

- Nation’s 6th-largest community-owned electric service provider
- 50% of power from non-carbon-emitting sources
- The first large California utility to receive more than 20% of its energy from renewable resources
- For the 12th consecutive year, in 2014 SMUD was 1st in California & 2nd in the nation in the J.D. Power & Associates survey of residential customer satisfaction & 1st in the nation among business customers.
- 2,200 employees
- 1.4 million residents in 900 square mile service territory
Challenges

Memory
Super
Suction
Machine
Challenges

We have an **aging workforce** and face a significant **brain drain**.

- Within the next 4 years, **46%** of all SMUD employees will become eligible to retire.
- **30%** of SMUD managers are currently eligible to retire (55 or better + 5 yrs of service)
  - **22%** have 19+ yrs of service
- **27%** of SMUD’s leads are currently eligible to retire.
- **18%** of SMUD area heads & **20%** of leads are age 55+ and have 19 or more years of service
- The average age for employees at SMUD is **46**.
- **15%** of SMUD employees have one-of-a-kind job classifications (300).
## Types of Knowledge

<table>
<thead>
<tr>
<th>Explicit Knowledge</th>
<th>Tacit Knowledge</th>
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<tbody>
<tr>
<td>• Formal</td>
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<tr>
<td>• Systematic</td>
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<tr>
<td>• Can be easily</td>
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<tr>
<td>communicated &amp; shared.</td>
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<tr>
<td>• Typically has been</td>
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<td>documented</td>
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Types of Knowledge

Explicit Knowledge
- SharePoint
- EDM
- Shared drives
- Process maps
- Training materials

Tacit Knowledge

??????
What is Knowledge Management?

- Knowledge management is the discipline of enabling individuals in an organization to collectively **acquire, share, and leverage** knowledge to achieve business objectives.
  - Accenture
KM Process

CAPTURE

STORE

SHARE

APPLY
When to Harvest

Entry  Expert  Exit
SMUD’s Knowledge Capture Initiative

• Initiative launched in 2009
• **Internal** research to uncover
  – Current approaches
  – What’s working
  – Challenges

• **External** research to identify
  – Industry best practice leaders
  – Benchmarking of SMUD to others
  – Existing tools to leverage

• Timeframe: Approx. 6 mos
• Practice leader interviews
• Formation of cross-functional team
• Toolkit design & development
• Beta testing & feedback
• Pre-briefings with HR Manager & Chief Workforce Officer

• Presentation to Executives outlining
  – Business Case - “Why Now?”
  – Process - “What to do about it?”
  – Needed Support (all levels of leadership)
• Memo from Chief Workforce Officer to all Leaders
• Meetings with business unit leadership teams to identify “at risk” individuals & work groups
• Training for “champions” to help deploy locally
• Open enrollment training
Knowledge Capture Initiative

Management-driven

Employee-driven
Management-Driven Process

• Met with senior leaders in each business unit who identified individuals most at risk for loss of critical know-how using KC Toolkit

• Followed up with key “at risk” individuals to step through remainder of KC Toolkit (2-3 mtgs)
Employee-Driven Process

• Twice annual half-day workshops offered to employees at all levels that steps them through the KC Toolkit. Topics include:
  – Why bother
  – Barriers to knowledge capture
  – Matching knowledge capture tactics to knowledge types
  – SMUD’s Knowledge Capture Toolkit: Step by Step
  – Knowledge Retention Plan

• Approx. 50/50 mix between SMEs & Supervisors
SMUD’s Knowledge Capture Process

- Assess Knowledge Loss Risks
- Assess Knowledge / Skill Criticality
- Knowledge Retention Plan
Application Activity: Rollout Approach

• Form small groups of 3-4
• Introduce each other then discuss:
  – In your organization, what approach would you likely take to developing & rolling out a knowledge capture program/initiative?
  – What are the key drivers for knowledge capture at your organization?
  – What are some potential concerns / barriers you may encounter?
  – Ideas to address those concerns?
I've been asked to quantify the benefits of our knowledge management systems.

I measured our intern's head to see if it got bigger.

The higher drag coefficient means we lost a little in the sandwich-fetching department.
STEP 1: Complete Knowledge Loss Risk Assessment

Purpose: Identify individuals at greatest risk of departing with critical/unique knowledge or skills.

Who Completes Step: Management
Knowledge Capture Toolkit

STEP 1: Knowledge Loss Risk Assessment

Position Risk X Departure Risk = Total Risk
(1-5 Rating) (1-5 Rating) Factor
Sample

- Title: Principal Energy Trading Specialist
- A number of Journey-level Energy Trading Specialists in this department. Just one Principal.
- Retiring in 4-6 months
- Only one with sole responsibility for
  - managing process of paying royalties, paying taxes, and collecting revenue related to SMUD 25% ownership interest in Rosa natural gas reserves in New Mexico (physical hedge to volatile gas market prices)
  - Creating (programming) & managing proprietary SQL database to track & manage this unique asset

On a scale of 1-5, with 5 being “high”, how would you rate the
- position criticality?
- departure risk?
Application Activity: Assessing Knowledge Loss Risks

• Re-form original small groups of 3-4
• Discuss:
  – In your organization, what would make a position “high risk” for knowledge loss?
  – In your organization, what are the greatest departure risks to consider? (*retirement, quitting, headhunting, etc.*)
  – Are there other factors you would want to consider when assessing who is most at risk for loss of critical skills/know-how?
WHO WANTS TO SHARE KNOWLEDGE WITH ME VIA OUR NEW INTRANET COLLABORATION SOFTWARE?

YOU DON'T HAVE ANY KNOWLEDGE TO SHARE. OUCH.

IT HURTS BECAUSE IT'S TRUE.

I'M HOARDING MY KNOWLEDGE IN CASE I EVER NEED IT.
What Knowledge to Capture?

- For those with critical/key roles, should we capture *everything* they know / do?
Knowledge Capture Toolkit

STEP 2: Complete Knowledge / Skill Criticality Assessment

**Purpose:** Identify what knowledge / skill is most “at risk”

**Who Completes Step:**
- Option 1: SME only
- Option 2: SME + Supervisor
Knowledge Capture Toolkit

STEP 2: Knowledge / Skill Criticality Assessment

Ratings of:
Importance X Rarity X Documentation
(1-5)  (1-5)  (1-5)
Sample

- Title: Principal Energy Trading Specialist
- Importance = 5
- Rarity = 5
- Documentation = 4
- Total Risk Rating = 100
Application Activity: Assessing Knowledge/Skill Criticality

- Re-form original small groups of 3-4
- Discuss: In your organization, how would you define...
  - “high” vs “low” importance skill/knowledge areas?
  - “high” vs “low” rarity for skill / knowledge areas?
  - “high” vs “low” levels of documentation?
  - Are there other factors you would want to consider when assessing which areas of expertise or skill should be the priority?
CARL QUIT. HE'S THE ONLY ONE WHO KNOWS HOW TO PROGRAM THE LEGACY SYSTEM.

IT CAN'T BE THAT HARD. GO FIGURE IT OUT.

FRACK.
Knowledge Capture Toolkit

STEP 3: Create a Knowledge Retention Plan

Purpose: Identify who will do what by when & current status.

Who Completes Step: SME + Supervisor
Knowledge Capture Strategies

• Knowledge Retention Plan template

• Knowledge Capture Strategies Menu (30+ strategies)

• Knowledge Capture Tactics in Depth intranet site
Sample Knowledge Capture Tactics

• Knowledge Capture Interview Guide
• Documentation
• Job Shadowing
• After Action Review
• Communities of Practice
  – Storytelling
    • SMUD Project Management CoP
    • SMUD Business Analysis CoP
Sample

• Title: Principal Energy Trading Specialist
• Some of the plan elements included:
  – Map process
  – Clarify roles/responsibilities
  – Identify key stakeholders / relationships (including regulators) & history with each
  – Knowledge capture interview
Sample

Q. “So what is it you do?”

A. “It’s really quite simple.”
Monthly Run of Severance Taxes and Royalties (Page 1 of 3)

**SMUD E&T&C**
- Check if data available on Williams gas kit website
  - 9th-15th of each month
  - Invoice
  - Statement
  - Volume allocation report
- Load monthly index
  - Index Price
  - Plots periodical online
  - Beginning of every month
- Build current PA well table
- Import volume allocation report
  - Excel file
  - Gas kit website
- Load Monthly Data
  - Volumes from statement (one #)
  - Net deliveries for each contract
  - Verify against statement
  - If mismatch between contract amount and actual then update database
  - Typically SMUD provisions adv notice from Williams
- Compute ONRR Royalties via RAMS
- Compute State of New Mexico Royalties via RAMS

**State of New Mexico**

**ONRR**

**Fee Owners**

**Notes**
- Office of Natural Resources Revenue (ONRR)

Rosa Asset Management System (RAMS) was developed by Randy to include all the unique attributes of Rosa. Skip can run the monthly severance tax and royalties and do system maintenance. Chad and Sue can run the monthly severance taxes and royalties.
Monthly Run of Severance Taxes and Royalties (Page 2 of 3)

**SMUD ET&C**

- **Severance Tax** (State of New Mexico) same website as royalties. Severance tax approximately $150k-160k/month
  - Generate a CSV for ONRR and State of New Mexico file uploaded to each site
  - Generate RFP ONRR State of New Mexico Severances and Royalties
  - Reviewed by Randy, Mgr ET&C and Settlements. Supervisor of Settlements gives final approval

**State of New Mexico**

- Validate CSV File for both Severance Taxes and Royalties

**ONRR**

- Validate CSV File

**Fee Owners**

- Process Payment to ONRR and State of New Mexico fee royalty owners by 20th for Federal and State; by 30th for fee royalty owners
- On deposit with ONRR approximately $250k. On deposit with State of New Mexico less than $20k

**Exceptional Delays**

- Data not available on websites. Find out about new wells (research and add to database). Rarely add new wells (1 year since last new well added). Error messages from SMUD system uploading volume allocation reports. Error messages Federal and State websites (data upload).

**Randy's Time:**

- Each month including print time 6-8 hours/month over 1 day. May be spread out over several days

**Whole Process:**

- 1-3 days for ET&C (note not including accounting, includes settlement review)

**Notes**

- Created: 1/29/2013
- Revised: 11/03/2013
- Revised: 11/05/2013
Send Statements, Fee Summary statement and mailing labels to SMUD Accounting along with approved copy of CSV

Send Fee statements and payments to Fee Owners. Scan Fee Summary statement into Accounting system

Receive Payment and Fee Statement
Patty is our new “Process Manager.”

Patty doesn’t know how to do anything.

She only knows how to do things better!

Process!

For example, this meeting is poorly managed because you have no process.

And this intern obviously had no process for deciding whether to attend.

Okay, Patty is annoying.

All in favor of getting rid of her.

You lasted longer than Timmy the “Facilitator.”
Application Activity: Knowledge Capture Tactics & Plans

- Re-form small groups
- Discuss: In your organization…
  - Which of the knowledge capture tactics discussed would you likely rely on for knowledge capture/transfer? Why are they more effective than the alternatives?
  - Are there other tactics for knowledge capture (not already discussed) you would utilize? Why?
DOGBERT CONSULTS
NO ONE USES THE INTRANET COLLABORATION SOFTWARE YOU SOLD US.

YOUR EMPLOYEES ARE DEFECTIVE. I RECOMMEND CAT SCANS.

THIS ONE IS DEFECTIVE TOO.

NEXT IN LINE!
Resources for Deployment

Staffing

- Organization & Workforce Development Staff
  - Learning & Performance Specialists
  - Business Partners
  - Organization Effectiveness Specialist
  - Business Unit planning staff
- Toolkits developed in-house

Studies

- Initial cost of contracted internal & external research studies
Outcomes

• Consistent, structured process deployed company-wide
• 60+ Knowledge Retention Plans created for critical “at risk” SMEs
• Critical processes documented
• Smoother transitions
• Tools to address short & long-term needs
Challenges & Lessons Learned

Challenges
• Prioritization
• Tracking

Lessons Learned
• It takes a village!
• Beta test
• Make it your own
• Continuous improvement
Helpful Resources

• CPS – www.cpshr.us

• Tennessee Valley Authority - http://www.tva.gov/knowledgeretention/

• If Only We Knew What We Know

• Lost Knowledge: Confronting the Threat of an Aging Workforce
Wrap Up

• Questions?

• Feedback survey

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