РОСАТОМ

ГОСУДАРСТВЕННАЯ КОРПОРАЦИЯ ПО АТОМНОЙ ЭНЕРГИИ «РОСАТОМ»

Knowledge Management System in nuclear power

Moscow

Rosenergoatom in 2015

Paper archives – more than 100 mln pages

No efficient communication

Duplication of R&D

No uniform IP policy

Average age of a researcher is over 50 years

Benchmarking of Knowledge Management System

POCATOM

KMS developers

IBM, BAIN & COMPANY, IBS, EMC², Global Knowledge, SAP, Google apps

KMS users

Financial Sector

World Bank

- ✓The system was integrated in 1997
- ✓Integrator – IBM
- ✓Budget – US $55 mln (3% of the administrative budget)
- ✓Based on SAP EPR

Asian Tradeboard

Electric Power Sector

SOUTHERN COMPANY

- ✓Introduction of KMS in 2005
- ✓Integrator – EMC Corp. Based on Documentum Platform
- ✓2 mln of documents
- ✓Effect – reduction of search for documents from 2 hours a day to 10 minutes.

GE

Military and Industrial Sector

US Army

IT sector

Microsoft, Apple, ORACLE

Gas & Oil Sector

ЛУКОЙЛ НЕФТЯНАЯ КОМПАНИЯ

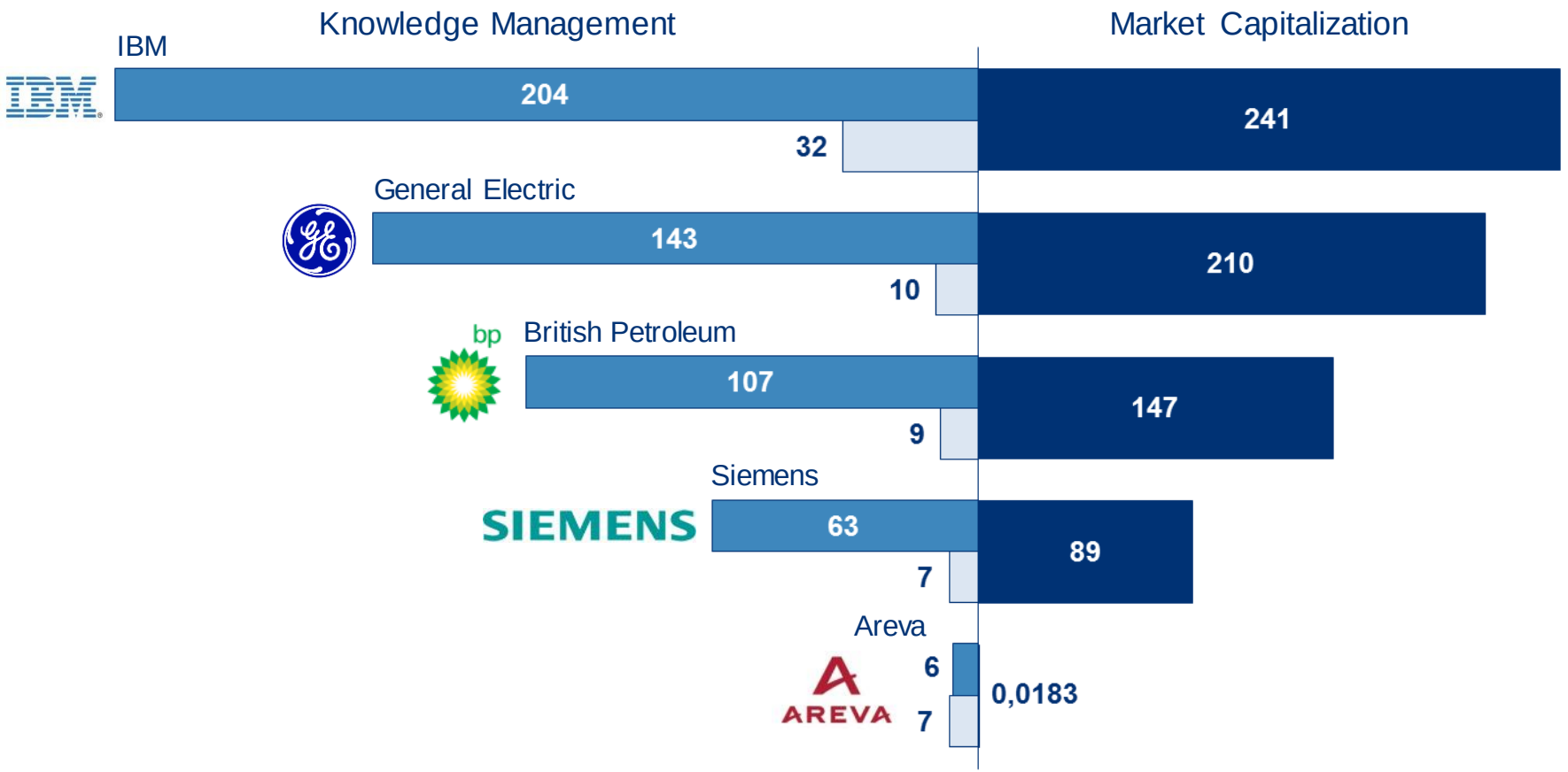
- ✓More than 4,000 specialists are involved in the sector.
- ✓Network (work) groups operate in business segments “Processing and Sales”, “Exploration & Production” etc.
- ✓Economic effect exceeded US $200 mln.

ConocoPhillips, Газпром, TATNEFT

Industrial Sector

Whirlpool, Ford, SIEMENS, Canon

Company capitalization and knowledge management

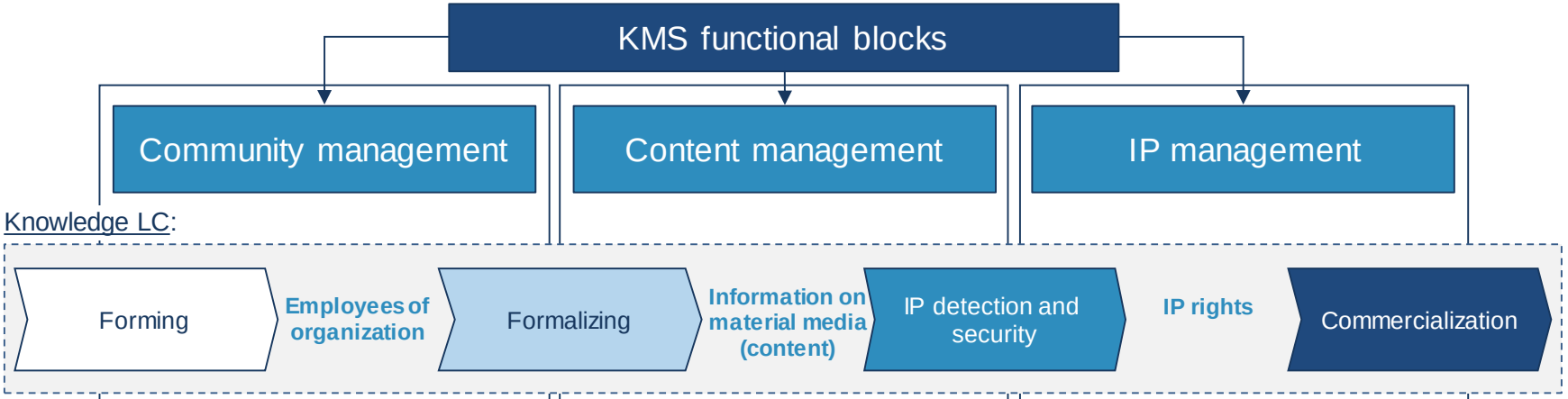


– results of the query "<Name of company> knowledge management" in Google since 2009, pcs.

– number of KM programs, pcs., information from the Internet sources

– market capitalization, US $ bln, information of companies' websites

KMS program



Projects

- Digitalization of paper archives
- Preservation of critically important knowledge
- Information system for expert community management (IS UKSS)
- Knowledge Management Training Program

- Science and Technology Information Portal
- Subscription to science and technology journals

- Information system for IP rights management

Project organizational framework

Nuclear Power Complex (NPC)

Mining Division	Fuel Division	Machine Engineering Division	Power Division
MC JSC Atomrezmetzoloto	MC JSC TVEL	MC JSC Atomenergomash	MC JSC Rosenergoatom Concern

Capital Projects (CP)	"Radiation Technologies" Program (RT)
MC JSC Atomenergoprom	MC OOO "United Innovative Corporation" (UIC)

Nuclear and Radiation Safety Complex (NRS)

Nuclear and Radiation Safety Directorate

Innovations Management (IM)

MC CJSC Science & Innovations

IMPLEMENTATION OF KMS DEVELOPMENT IN NUCLEAR POWER

Methods and tools preserving critically important knowledge

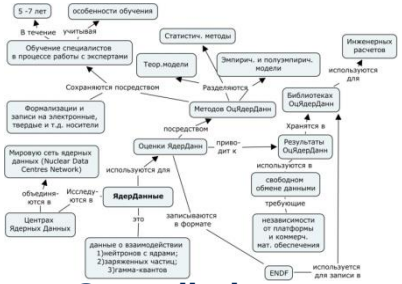
Objectives:

- Reduction of risk of loss due to a knowledge holder retirement
- Involvement of CIK in innovative activity
- Ensuring continuity between generations
- Commercial use of CIK

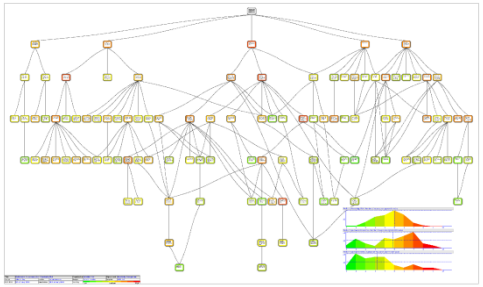
«Critically Important Knowledge Preservation Procedure»

1. Identification of critically important knowledge
2. Assessment of risk of loss of critically important knowledge
3. Development and implementation of Critically Important Knowledge Preservation Program
4. Quality assessment of preservation process of crytically important knowledge

«Methodological recommendations for preservation of critically important knowledge»



Compilation of concept maps

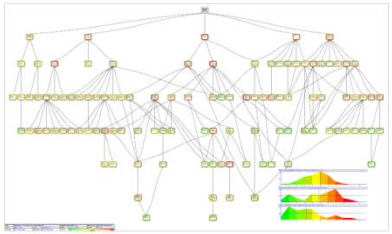


Development of knowledge maps

Assessments of knowledge risks of loss

Methods of retrieval, structuring and formalization

Preservation of critically important knowledge. Transfer of knowledge



Mapping of knowledge

Producing knowledge maps of Division

Preservation of critically important knowlegde

- **Identification**
- **Retrieval**
- **Formalization**
- **Structuring**

Knowledge transfer

STI Portal
Filling in the corporate multi-media library of critically important knowledge

Management of IP rights
Transformation of critically important knowledge in new commercial products

Mentoring (CPD Project)
Mentoring for transfer of key knowledge and skills

Rosenergoatom's KMS – the one that others do not have

Knowledge Management Methodology is based on the IAEA practices

✓The corporate knowledge management system concept has been worked out based on the IAEA (International Atomic Energy Agency) methodologies and practices.
✓The successful three-year experience in implementing KMS in nuclear power has been described and published in the IAEA cases.
✓The continuous personnel training system has been implemented.

Online implementation of the fundumental methodology

✓Knowledge management is integrated in business processes of ROSATOM
✓Each business process is based on IT platforms:

Content management	Online library of science and technology information
Community management	Social network of scientific experts
IP management	IT system for IP management

Integration of KMS with a user workplace

✓All IT systems are based on uniform software platform – Microsoft SharePoint
✓The platform is certified by FSTEC for processing of restricted use information
✓KMS IT systems integrate working calendar Outlook, Microsoft Office, Microsoft Lynk

KMS in LC of product

✓KMS tools adaptability provides an opportunity for adjusting each stage of the product LC from design to disposal

IT system for KMS management is integrated with the state-level system EGISUN

✓As per Resolution of the Government of Russia No. 327 of 12.04.2013 the uniform state information system for accounting of science and technology, research and development civil works (EGISUN) has been created.
✓The corporate IP management system of ROSATOM and Rosenergoatom with the support of the Ministry of Education of Russia is integrated in EGISUN.

Experts/Practitioners communities

POCATOM

Sponsor

A community initiator; it ensures that the community is recognized in the organization; it allocates resources needed for community activities support; it ensures feedback on key issues of the community etc.

Moderator

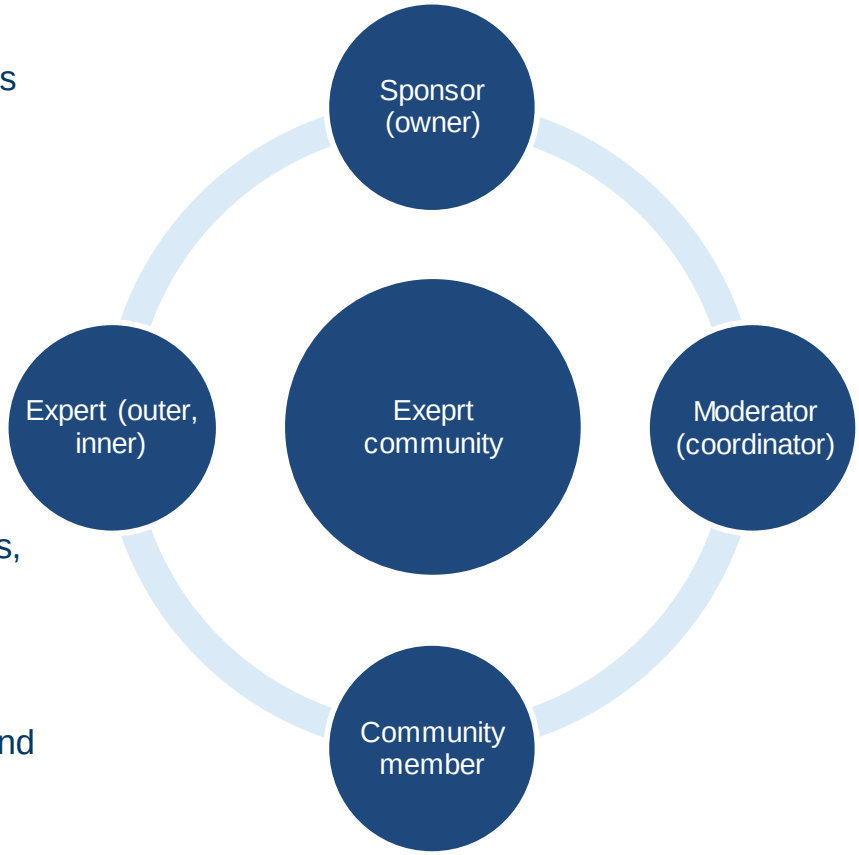
Organizes and plans the work of the community; it creates events; initiates discussions; sets and traces task progress etc.

Expert

Facilitates exchange in knowledge, interprets information, responds to questions, leads discussions, recommends handy materials and publications etc.

Community members

Participate in the work of the community, jointly draw out documents, fulfill the pre-set tasks, may initiate and participate in discussions, ask questions etc.



Practitioner/practice community is a group of people united by common problems and interests to exchange knowledge and learn from each other (Wenger, McDermott and Snyder, 2002) **in the course of solving work tasks**

Practitioner communities. Tools

Tools/Capabilities	Feature
Crowdsourcing	Collection of employees' ideas on the pre-set task with a possibility for their assessment
Joint work with documents	Simultaneous work on one document of two and more employees
Integration with workplace	The entire line of Microsoft products (Office, Outlook, Lync) is integrated with IS UKSS
Library of documents	All information about the community activities is stored in one place
Engagement/Awareness	Running blogs, creation and running Wiki, possibility for commenting and assessing

Building up competences of specialists in KMS: “Knowledge Management in Nuclear Industry” program

Building up competencies in KMS

Main goal: ensuring the necessary competence level of employees to implement technologies and use the tools of KMS in ROSATOM and its organizations. Familiarization with the best world and Russian practices in knowledge management and creation of the corporate KMS.

Target audience: deputy heads on innovations of ROSATOM’s organizations and key specialists who are competent in managing science and technology community, managing science and technology content and managing rights of intellectual property (KMS coordinators)

Program includes 7 modules:

1. General overview of knowledge management.
2. World best knowledge management practices.
3. Knowledge management model of ROSATOM.
4. Management of the science and technology community in ROSATOM.
5. Management of science and technology content in ROSATOM.
6. Management of intellectual property rights in ROSATOM.
7. Practices of KMS implementation in the organization.

THANK YOU FOR ATTENTION!