Refinery Productivity Center™

A Knowledge Management and Collaboration Solution
for the Refining Industry

Refining Online®

A service from Astron International, Inc.

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1. Refinery Productivity Center™

Significant inefficiencies arise from either not adhering to or not practicing accepted best practices in operations. In many cases, these involve repetitive procedures that lend themselves to standardization and even automation. A large amount of losses from reliability issues result from a few incidents that were the outcome of known procedures not being followed. Elimination of human error has a huge potential to improving the bottom line.

The *Refinery Productivity Center™* (RPC) is a Web based knowledge management application from Astron International to organize valuable knowledge and best practices to improve time and cost efficiencies of daily operations. Astron International, Inc., the founder of *Refining Online*® (www.refiningonline.com) developed RPC using a unique blend of refining domain knowledge, business process intelligence, and proven application development skills. RPC is a valuable knowledge management tool for refining companies, suppliers, and services companies in the refining industry.

RPC is designed to create value by organizing the tacit knowledge within communities of practice into explicit standard procedures and best practices for daily operations. A community of practice is a group of people who are informally bound to one another by exposure to a common class of problem. For example, personnel involved in maintenance and reliability form a community of practice.

a. Communities of Practice

The Communities of Practice feature enables collaboration and knowledge sharing amongst professionals focused on the same process, technical or business area in the company with a real need to know what each other knows. Each Community of Practice can comprise of any combination of the following functional modules depending on the needs of the community. Each Community of Practice is setup and managed in RPC by its respective community administrator.

1. News
2. Best Practices
3. Document Library
4. Drawings
5. Discussion Board
6. Contacts
7. Calendar
8. Members

News: News related to a community. News articles can be archived for later use.

Best Practices: Compendium of accepted best practices and related files for a community.

Document Library: A library of files to be shared with members of the community.

Drawings: A collection of drawings and images relevant to the community.

Discussion Board: A place to post questions/information and receive responses from other members of the community.

Contacts: A selective directory of contacts related to the community.

Calendar: Community specific calendar where events can be flagged so email reminders can be sent to members who request this service.

Members: Listing of all community members and related information.

The following figures illustrate some of the modules of a community of practice in RPC.
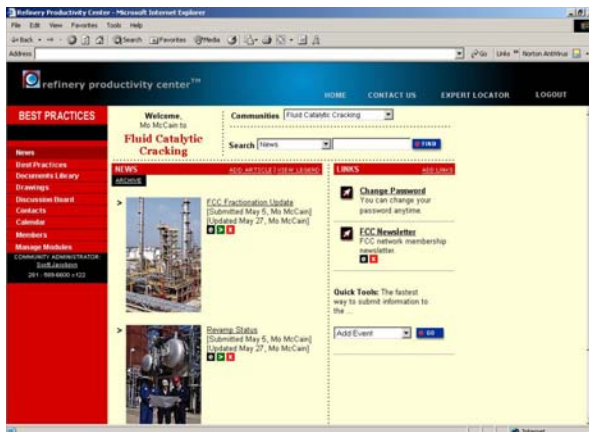

Figure 1: News Module
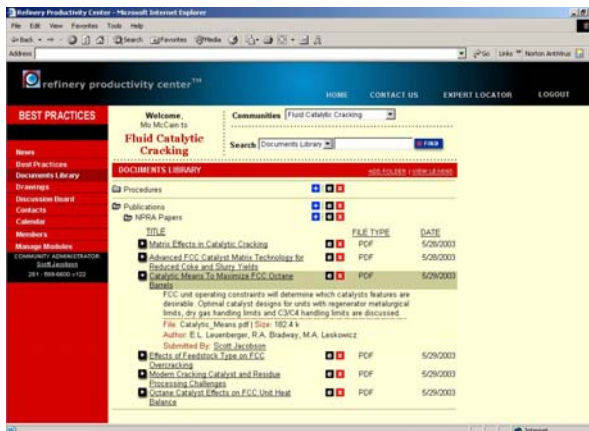

Figure 2: Discussion Module
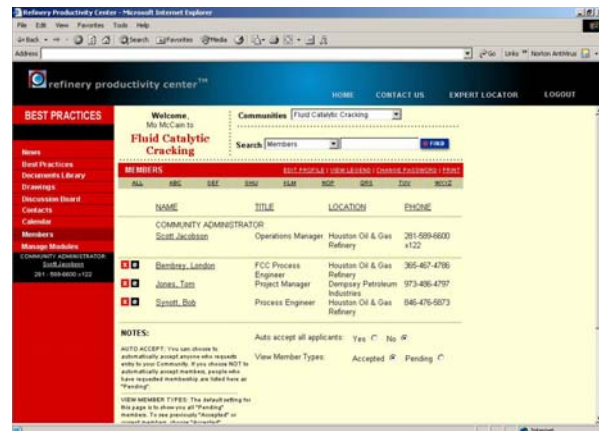

Figure 3: Doc Repository Module

Figure 4. Members Module

RPC includes a comprehensive set of communities of practice pre-created for the refining industry. Table 1 lists all the communities in RPC and their respective functional modules. Note that these pre-created communities are to get you started and any of the communities and most modules can be added or removed by the RPC site administrators.

Communities of Practice	News	Best Practices	Doc Repository	Drawings	Discussion	Contacts	Calendar	Members
Coking	x	x	x	x	x	x	x	x
Thermal Cracking/Visbreaking	x	x	x	x	x	x	x	x
Fluid Catalytic Cracking	x	x	x	x	x	x	x	x
Catalytic Reforming	x	x	x	x	x	x	x	x
Hydrocracking	x	x	x	x	x	x	x	x
Hydrorefining	x	x	x	x	x	x	x	x
Hydrotreating	x	x	x	x	x	x	x	x
Alkylation	x	x	x	x	x	x	x	x
Polymerization/Dimerization	x	x	x	x	x	x	x	x
Hydrogen Production	x	x	x	x	x	x	x	x
Aromatics (BTX, …)	x	x	x	x	x	x	x	x
Isomerization	x	x	x	x	x	x	x	x
Oxygenates (MTBE, ETBE…)	x	x	x	x	x	x	x	x
Amine Treating	x	x	x	x	x	x	x	x
Catalysts and Additives	x	x	x		x	x	x	x
Caustic Treating	x	x	x	x	x	x	x	x
Process Control/Data	x	x	x		x	x	x	x
Corrosion	x	x	x		x	x	x	x
Distillation	x	x	x	x	x	x	x	x
Economics and Planning	x	x	x		x	x	x	x
Environmental	x	x	x		x	x	x	x
Maintenance and Reliability	x	x	x		x	x	x	x
Instrumentation	x	x	x	x	x	x	x	x
Safety	x	x	x	x	x	x	x	x
Projects	x	x	x	x	x	x	x	x
Rotating Equipment	x	x	x	x	x	x	x	x
Product Quality	x	x	x		x	x	x	x
Steam	x	x	x	x	x	x	x	x
Sulfur Recovery	x	x	x	x	x	x	x	x
Lab Analysis	x	x	x		x	x	x	x
Crude Quality	x	x	x		x	x	x	x

Table 1: Example Communities of Practice and their modules in RPC

There are four different types of user roles in a Community of Practice. Below is a list of the highest to the lowest level community user.

a. *Super Community Administrator* has authority to supervise all Community Administrators and override any changes to information in the communities.

b. *Community Administrator* manages all of the modules and all members of the community. The Community Administrator is assigned by the Super Administrator from the Administrator site.

c. *Community Manager(s)* have less authority than a Community Administrator and are assigned by the Community Administrator. A manager can control only those modules that the Community Admin has assigned him or her to manage.

d. *Members* have the ability to view all content in the community of practice and post certain information directly to the site or for approval by the community manager.

b. Expert Locator

The Expert Locator lets users search the RPC member directory by area of expertise, name, location, etc. This feature is useful for locating subject matter experts across all communities.
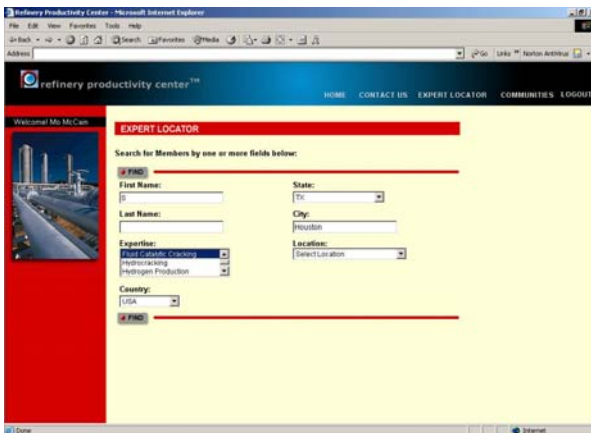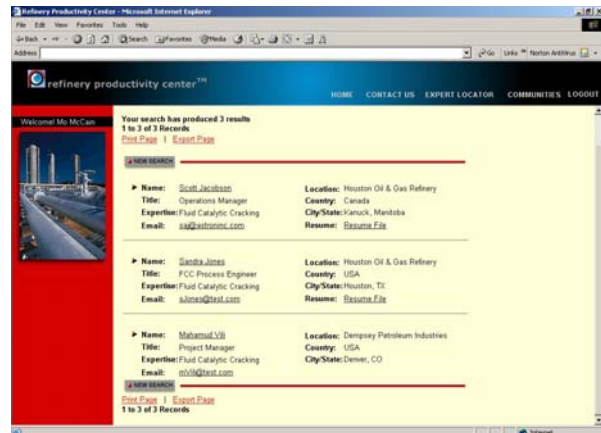

Figure 5: Expert Search   Figure 6: Search Results

c. Administration Site

RPC includes a powerful Web based administration site to manage RPC's users and content without the assistance of an IT professional. The following figures illustrate the RPC administration site.
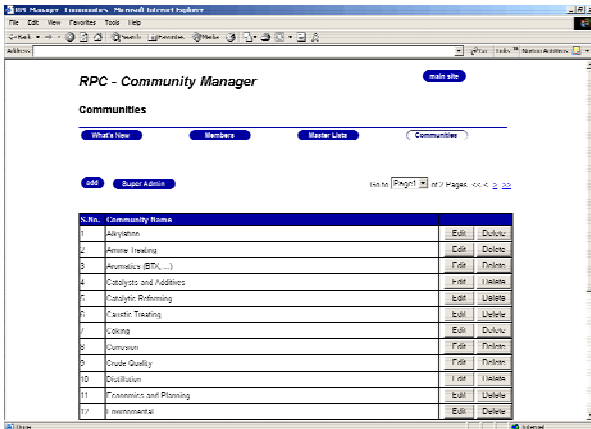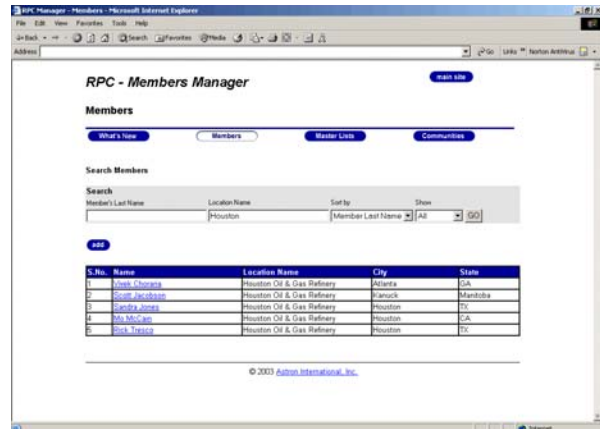

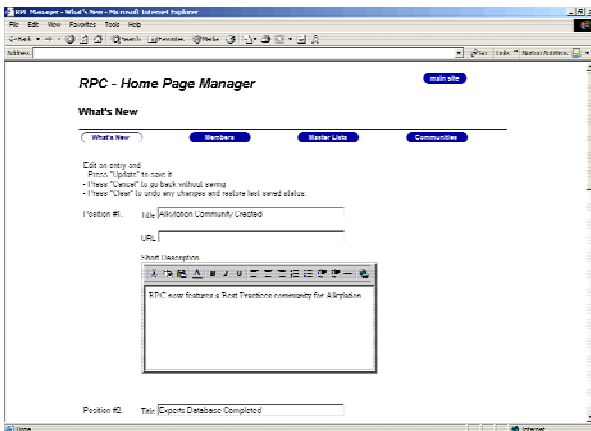Figure 7: Communities Manager

Figure 8: Members Manager
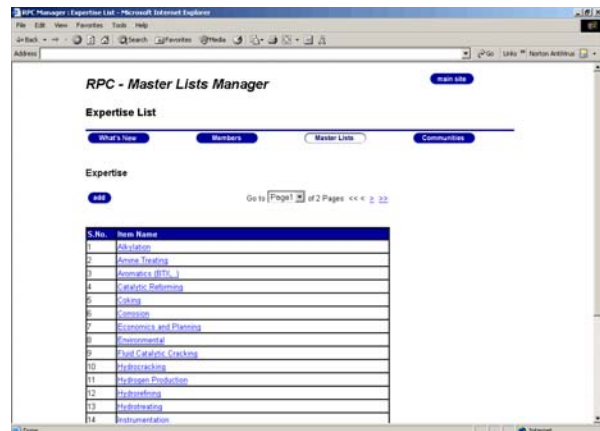

Figure 9: What's New Manager

Figure 10: Master Lists Manager

2. Technology

The *Refinery Productivity Center* is a Web based application with a user-friendly and intuitive interface. RPC was developed using the following technologies.

- Microsoft Active Server Pages
- Microsoft Windows 2000 Server
- Microsoft SQL Server 2000
- Microsoft IIS 5.0
- Microsoft Index Server
- Persits Software Inc, AspUpload
- Persits Software Inc, AspEncrypt
- Persits Software Inc, AspJpeg

A deployment documentation with guidelines and procedures for installing RPC on your servers is included with the product. You would need all the above licenses.

3. Licensing

Refinery Productivity Center is available for licensing from Astron International, Inc.

For licensing fees or further information please contact:

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