



Goldfire Innovation Software - Recent Developments

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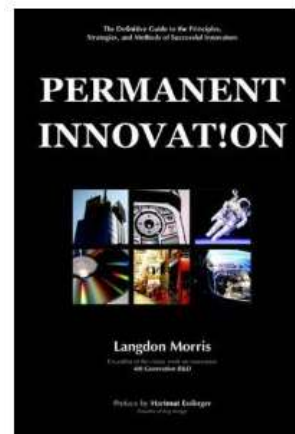
What is Goldfire

- Software solution platform, developed by Invention Machine Corporation, to assist companies to achieve sustainable innovation,
- Goldfire integrates the following product features
 - Proven problem analysis and idea generation methodologies
 - Patented semantic knowledge research capability to help engineers be knowledge-enabled in analyzing problem and opportunities, and generating solutions
 - Capture, share and re-use engineers' thought process as corporate knowledge

Goldfire as TRIZ software
Putting TRIZ tools/contents into the enterprise
innovation processes, as an engine to drive
systematic innovation

“Innovation without Methodology is Just Luck”

- *“There are lots of creative people in your company, and given half a chance they’ll probably create some great innovations.*
- *But if you rely on their random efforts then you’re risking your success on chance, and that’s not enough.*
- *You have to develop and apply methodologies, the right methodologies, to make the shift from luck to consistency, predictability, and sustainability”.*
-*“Permanent Innovation” (Langdon Morris, 2006)*



Key Capabilities to Achieve Innovations

3 Challenges for Manufacturing Companies

New product/technology pipeline which can sell

Limited 'Time', 'Budget' and 'Human resources'

Maintain product quality (avoid quality issues)

Strong Product and Technology Development Capability

Proposed in the Dec 2009 issue of "Nikkei Monodukuri"

Knowledge-enablement
Leverage internal and external knowledge for faster and quality problem analysis and solutions

Analytical capability
Logically analyze problems to find new angles for problem analysis and solutions

Conception capability
Foresee potential issues, generate and select promising concepts for solutions

Call for Methods/Tools to empower engineers on these 3 critical capabilities

3 Key Elements for Innovation

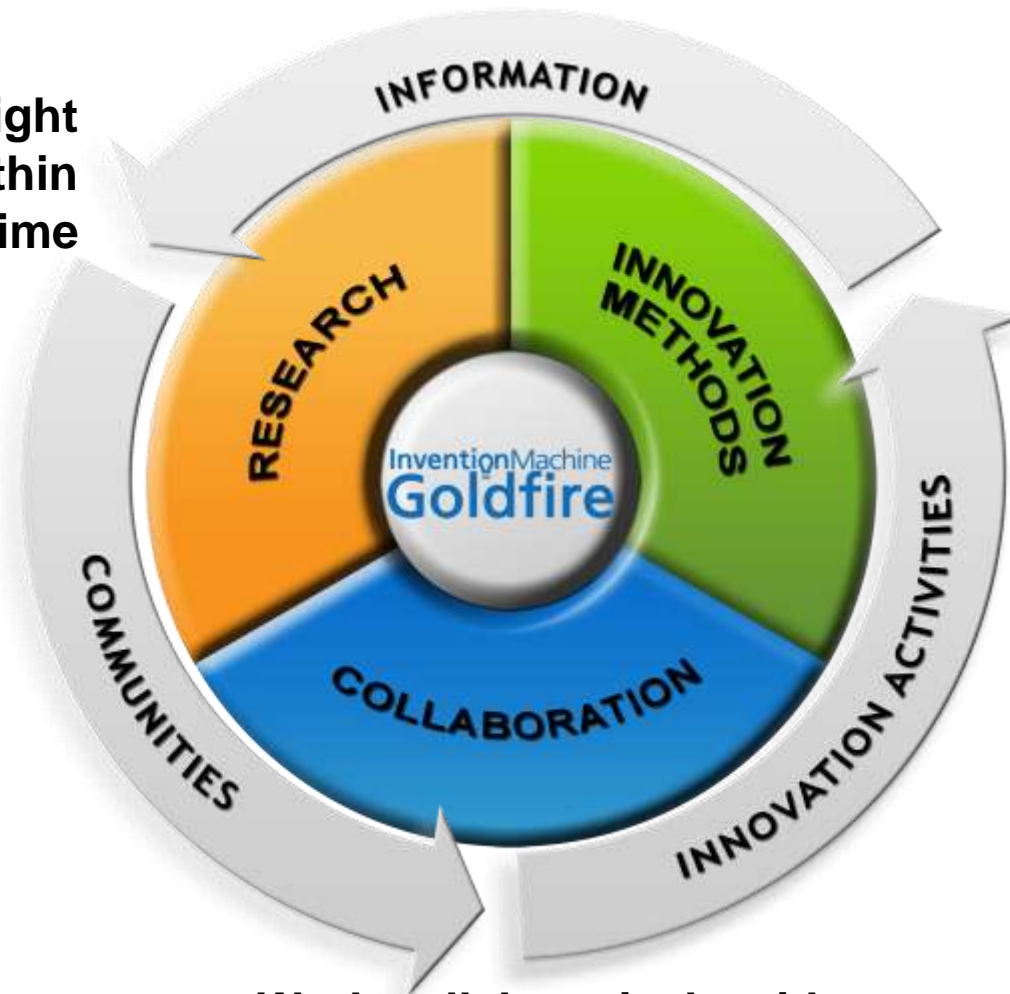
Information

Communities

**Innovation
Activities**

The Innovation Solution

Get the right information within the right time



Capture & reuse expertise & new intellectual capital

Work collaboratively with repeatable & effective methods

Recent enhancement of Goldfire (1)

- Introducing “Tasks” (Ver. 5)
 - Provides “Best Practice” workflow utilizing various Goldfire features for most-common innovation activities

The screenshot displays the Goldfire software interface. On the left, a 'My Tasks' panel lists various activities, with 'Fix Product Defect' highlighted. The main window shows a detailed workflow for this task, titled 'Fix a Product Defect'. The workflow consists of three main steps:

- 1. Explore prior experience:** Search for knowledge to find a fix. If a fix is found, it might be all that's needed. If not, proceed to a more in-depth analysis.
- 2. Analyze and solve core problem:** Build a cause-effect model to analyze root causes. If solutions are found, they might be all that's needed. If not, build a function model.
- 3. Analyze system and fix defect:** Use problem statements from Step 2 as a starting point. Build a model of the product or process. This step includes an optional part to simplify the design.

The workflow ends with an 'EXIT' button. The interface also includes a 'My Tasks List' tab and 'Expand All' / 'Collapse All' buttons at the bottom.

Recent enhancement of Goldfire (2)

- Knowledge Navigator (Ver. 5.5)
 - Enable engineers to quickly become ‘knowledge enabled’ and make ‘informed decisions’ around topics and technologies

Goldfire's Knowledge Navigator provides more than 40 “Concept Lenses” to assist with topic exploration

Recent enhancement of Goldfire (3)

- Problem sharing/discussions, Expert Finder (Ver. 6)
Promote collaboration for innovations

The screenshot displays the Invention Machine Goldfire software interface. The main window is titled "carrier increase* - Invention Machine Goldfire" and features a menu bar (File, Edit, View, Tools, Report, Repository, Help) and a toolbar. The interface is divided into several sections:

- Problem-Sharing:** A central panel with tabs for "Current Project File" and "All Project Files". It displays a discussion titled "Prior Work on Behavioral Biometrics?". The discussion text reads: "I am building a proposal for a behavioral biometric security system, but not finding much internal biometrics. Externally, I can find data on the topic, though. Our company has significant documentation on physical biometrics, and I heard that years back... begun. Does anyone know about this project, and possibly, any internal documentation which I current project?". Below the text are "Reply" and "More Options" buttons. A "View: My Project Files\ Behavioral Biometric Security\" dropdown and a "Find Facts about X" button are also visible.
- Corporate:** A sidebar on the left with a "Name" field and a list of items including "Mail...", "MIT...", and "Dens...".
- Problem-Sharing:** A bottom section with two tables: "My Problems and Discussions" and "Shared Problems".

The "My Problems and Discussions" table contains one entry:

Problem	Messages	Date
How large is the carrier on p-n junction?	1	11/06/22

The "Shared Problems" table contains five entries:

Problem	Author	Messages	Date
How large is the carrier on p-n junction?	Kageyuki Na...	1	11/06/22
What is optimal material for Core of motor	遊佐次郎	2 new of 2	11/06/17
銀の伝導率を上げる方法	遊佐次郎	1 new of 1	11/05/31
What is the conductivity of silver?	遊佐次郎	1 new of 1	11/05/30
鋼のサド	遊佐次郎	1 new of 1	11/05/19

A red callout box on the right side of the screenshot contains the text: "Allows engineers to share problems in their organizations, have discussions online. All discussions are semantically indexed and captured as new 'corporate knowledge'".

Conclusions

- Product and technology ideas are needed at every phase of product development cycles
 - Planning, R&D, Product and production engineering, Q/A, etc.
- Need to leverage “information” as “knowledge”, allow “people” to work collaboratively in various “innovation activities”, to establish process to achieve sustainable innovations
- Goldfire puts TRIZ methodologies (tools/contents) into enterprises’ innovation processes, allowing engineers to benefit from TRIZ.

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