The Need for Facilitated Thinking Environments (FTEs)

By

Dennis J. Heindl

Executive Summary

New Workforce Development *Learning* initiatives seem to be a daily event, *Thinking* initiates are rare. While learning is obviously important, the future is more about improving workforce thinking productivity and effectiveness. Traditional ways of thinking are too slow and ineffective now. New ways of thinking are required to create a change-adept workforce that can better meet the challenges of constant change. This white paper describes development of a new form of "Facilitated Thinking Environment" that can improve Knowledge-worker thinking productivity in much the same way that the invention of the assembly line improved Manual-worker labor productivity.

Why Facilitate Thinking?

"The most important contribution of management in the 20th century was to increase manual worker productivity fifty-fold. The most important contribution of management in the 21st century will be to increase knowledge worker productivity – hopefully by the same percentage." *Peter F. Drucker*

No matter where you look, organizations from schools to the largest conglomerates face the same challenge: How can worker performance be improved? It is clear that the winners will be those organizations responsive enough to profit from change by applying innovative thinking often enough, fast enough, and well enough to create competitive advantages.

Workers now need to be reactive thinkers who can respond to any change in the marketplace, competitive situations, or employee opportunities. They must simultaneously be pro-active thinkers who can take advantage of situations through anticipation and preparative steps which can be immediately activated when the situation demands.

Developing a high-performance and "change adept" workforce requires creating the environment and putting in place the tools, practices and procedures that improve knowledge worker thinking productivity. This paper describes how to improve workforce thinking productivity through the development of

Facilitated Thinking Environments (FTEs). FTEs deliver the right thinking tools and strategies needed to fully unlock the potential and productivity of human thought.

It is productive human thinking that enables an organization to create sustainable competitive advantages from a skilled and motivated workforce.

Concept of Facilitated Thinking Environments (FTEs).

Facilitated Thinking is a process that improves knowledge-worker *thinking productivity* in similar ways that the invention of the assembly line improved manual-worker *labor productivity*. With a just-in-time approach, a *Facilitate Thinking Environment* delivers within a precise thought process the right questions to ask, the correct thinking tools to use, and the proper thinking methods to enhance personal or team thinking performance.

Just as the manual-worker's productivity depends on using the right tools, thought-workers need the right cognitive tools. Employing the right cognitive tools for knowledge-workers requires tools that enhance awareness, promote new methods of thinking, speed the thought process and response time, and get results in terms of predictable actions.

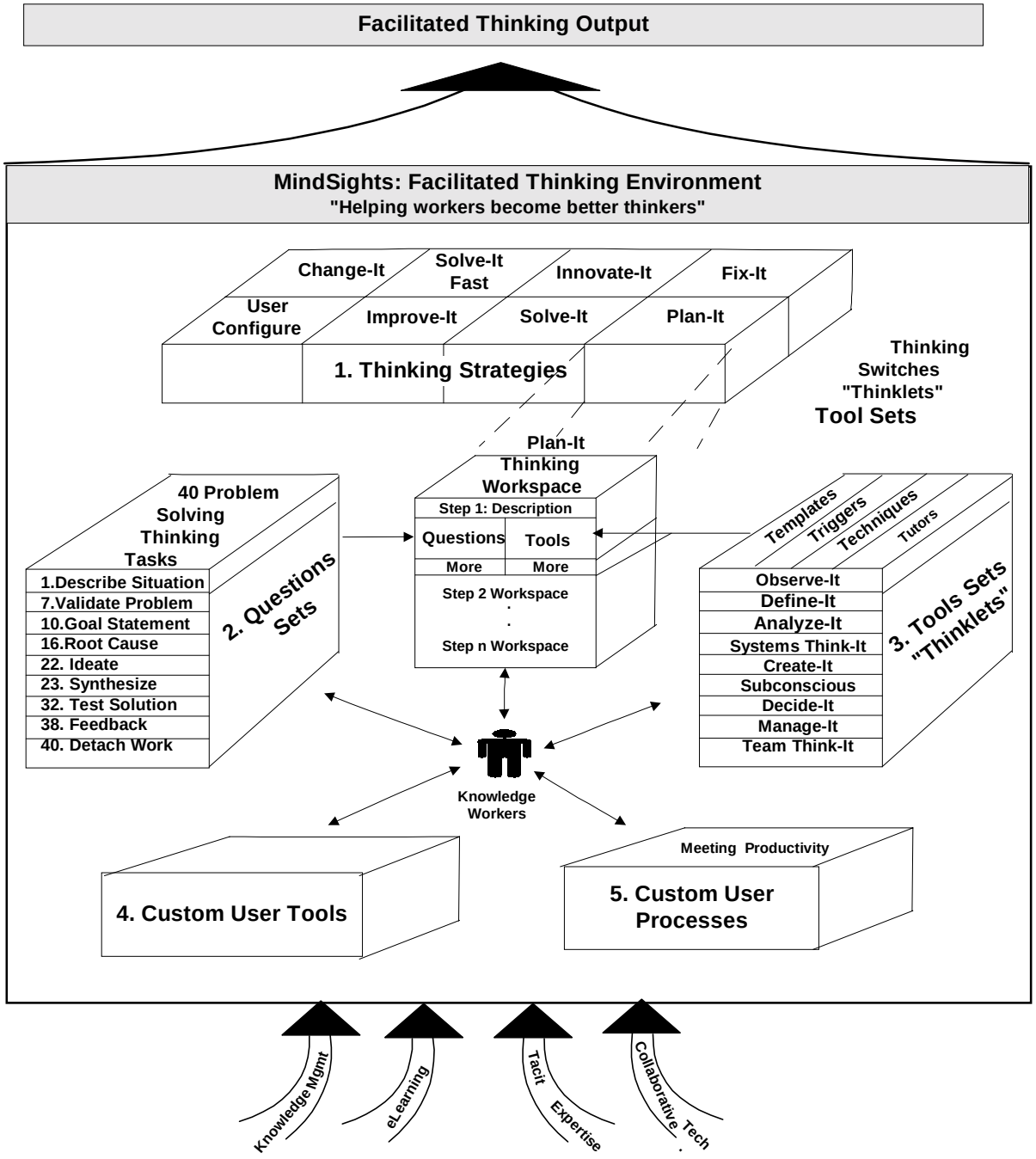
The choice of using thinking methods and tools should be based on the same principle that underlies the selection of any tool: choose one appropriate for the task at hand.

How FTEs work.

Facilitated Thinking Environments empower worker thinking. While we all have the ability to think in different patterns, our minds are optimized to use dominant and repetitive thinking patterns. Generally, these dominant thinking patterns are acquired from education, work and life experiences. We all use these experiences (patterns) stored in our memory as a guide for how to proceed. The danger, however, in always using these same thinking patterns is that the pattern doesn't always fit the thinking task at hand. Thus, the "box or rut" is created from which we are continuously urged to "think-out-of."

Using the wrong thinking strategies and tools results in unproductive thinking performance. FTEs are designed to break scripted mental patterns by prompting users to react to "Thinklets" or *thought switches*. Instead of just searching the mind for routine solutions, these Thinklets promote different thinking patterns that result in the development of new ideas and solutions.

Please note: *Facilitated Thinking Environments (FTEs)* are not a substitute for human thinking. In contrast to Artificial Intelligence/Expert Systems that attempt to automate thought, *FTEs* support and amplify natural human thought. Creating these environments makes the average worker good, the good become excellent, and the excellent can attain exceptional levels of new thinking. Even Einstein had his circle of colleagues who served as his ... *Facilitated Thinking Environment*.



1. Thinking Strategies

Many people believe it makes little difference which problem-solving or thinking-process people are trained to use, or comfortable by habit in using, as long as it is systematic. *Not true*! Using the wrong thinking strategy or process will unproductively shape thinking performance.

Thinking Strategies are the mental structures or frameworks (practices, processes or procedures) in which thought occurs. Like a human facilitator, these strategies guide thinking with the goal of helping people focus on what is important, and, prompting them on how to think through situations more creatively and effectively. *Facilitated Thinking Environments* recognize, however, that every problem, person and situation is unique and consequently different levels and types of thinking strategies are required.

Correctly identifying the type of *thinking situation* is the critical first step for effective thinking. Proper identification is vital because different *thinking strategies* are needed depending on the situation you are trying to address or resolve. Standard FTE Thinking Strategies are

- **Corrective:** Restore something to an original, past or standard condition. (Fix-It)
- **Improvement:** Make the current situation or level of performance better. (Improve-It)
- **Creative/Innovative:** Develop something new and of value that never existed before. (Innovate-It)
- **Futures**: Anticipate and prepare for opportunities or problems. (Plan-It)
- **Problem Solving**: Resolve something in which people have conflicting viewpoints. (Solve-It)
- **Troubleshooting**: Quickly resolve an urgent situation or condition. (Solve-It Fast)
- **Coaching/Change-adept**: Personal mastery of life's constant challenges and change. (Change-It)

2. Thinking Tasks – Question Sets

Thinking tasks are the basic building blocks of thinking. Forty (40) such mental tasks have been identified such as analysis, synthesis, description, review, decision, etc. These tasks can be applied to virtually any kind of topic, object, event or situation.

A key to executing thinking tasks effectively is to ask the right question(s). Asking the right questions gives the mind the best chance to find the right answer. Good questions also invite new perspectives which can lead to innovative ideas and solutions.

3. Tool Set – "Thinklets"

Tool Sets are a collection thinklets organized by thinking functions. The tool sets are designed to facilitate thinking within one specific area of thought. Many of the thinklets were derived from the masters in their fields and have proven to be invaluable, effective and successful. Many other tools are unique to MindSights™ and not available anywhere else.

Note: *Thinklets (thought switches)* are small bursts of mental stimuli that can be as simple as one question, a short template or a thinking technique. These thought switches help the thinker alter routine thinking patterns and activate not commonly used patterns leading to new associations, relationships and ultimately new ways of thinking. Four types of thinklets:

- Thinking Templates: Produces more effective thinking by using forms, worksheets, or models to quickly guide thought processes.
- Thinking Techniques: Takes a person down different thinking paths to find ideas, understandings or solutions that otherwise might not be discovered.
- Thinking Tutors: These tools provide just-in-time knowledge and understanding that can be immediately applied to the thinking task at hand.
- Trigger Questions: Asking the right question gives the mind the best chance to find the right answer.

Note: The term "Thinklet" was first used by IBM in 2001 to describe reusable logic code. In FTEs thinklets are thought switches that are designed to help the thinker alter routine or scripted thinking patterns.

4 & 5 Customize FTEs

Use MindSights "as is" or shape it and command it to fit specific needs of your project, team or entire organization. Because it is developed as a Microsoft Word application, it allows for full customization making it truly under your cause and control. It allows for full customization making it truly under your cause and control.

- Easily modify existing Tool Sets and Questions Sets. For example, a particular tool may contain 35 questions; you can easily edit that down to the top 10 questions that most closely match your needs
- Add your own proprietary tools and questions. Start capturing expert tacit knowledge.
- Customize MindSights' pre-configured thinking strategies to better address unique situations.
- Automate thought processes that you, your team or enterprise routinely use for reuse and best outcomes.

Input Systems that Enhance FTE Performance

Facilitated Thinking Environment effectiveness can be enhanced by integrating the following systems.

- **Knowledge Management:** There is a correlation between people who think better and develop more ideas with those that have a wide range of relevant background knowledge. Effective thinking can only occur if a person/team acquires the right 'critical mass' of data and information to think upon. Good knowledge management focuses on the issues related to creating, dissemination and utilization of data, information and knowledge. They get the right knowledge to the right people at the right time which is essential for improved thinking productivity.

- **eLearning:** More and more workers do not have time to leave their jobs to take structured training courses. In addition, while information and knowledge is available at internet speeds, the ability to leverage such knowledge is sometimes too slow to produce a favorable business outcome. eLearning promotes on-demand learning when the job requires it by developing learning objects or small granular chucks of learning. The evolution of Integrated eLearning Environments (ILE) is a natural complement to Facilitated Thinking Environments.

- **Subject Experts:** Perhaps as much as half of all knowledge is contained in the experience and tacit know-how of real universe experience. Tacit knowledge acquisition and transfer allows the inexperienced to gain years without the trial and errors, and to apprentice with the "old hands". A

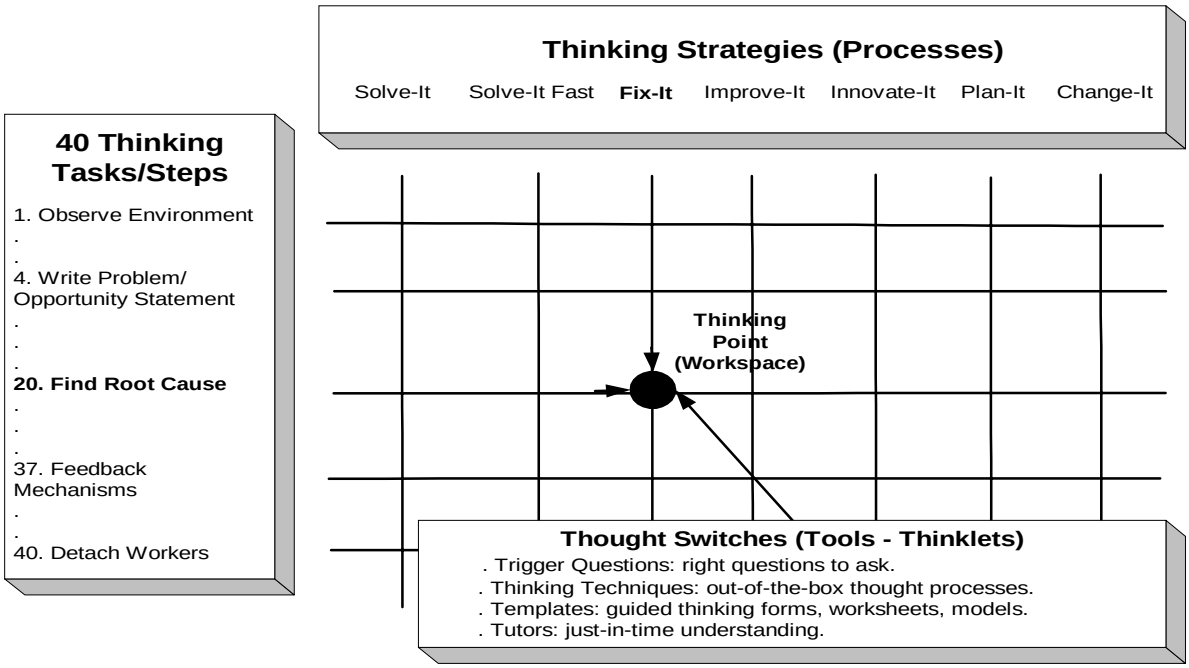
holistic facilitated thinking environment goal should be linking Users to each other so that they can share tacit knowledge. In a truly collaborative manner, this will make available the 'best thinking practices' of people from around the world.

- **Collaborative Technology:** Working collaboratively brings forth a synergy that raises everyone's level of thinking. Collaboration helps to create a shared understanding that no one person had previously possessed and co-create new ideas that no one person could have come to on their own. The integration of facilitated thinking tools and switches into collaborative technologies can be a very, very powerful combination.

Thinking Emulation Grid™ – The Heart of an FTE.

The following *Thinking Emulation Grid*™ essentially duplicates (emulates) how a human facilitator functions when providing intellectual guidance. The grid identifies the major *thinking points* and cognition resources (*thought switches*) needed to effectively think at each one of the thinking points.

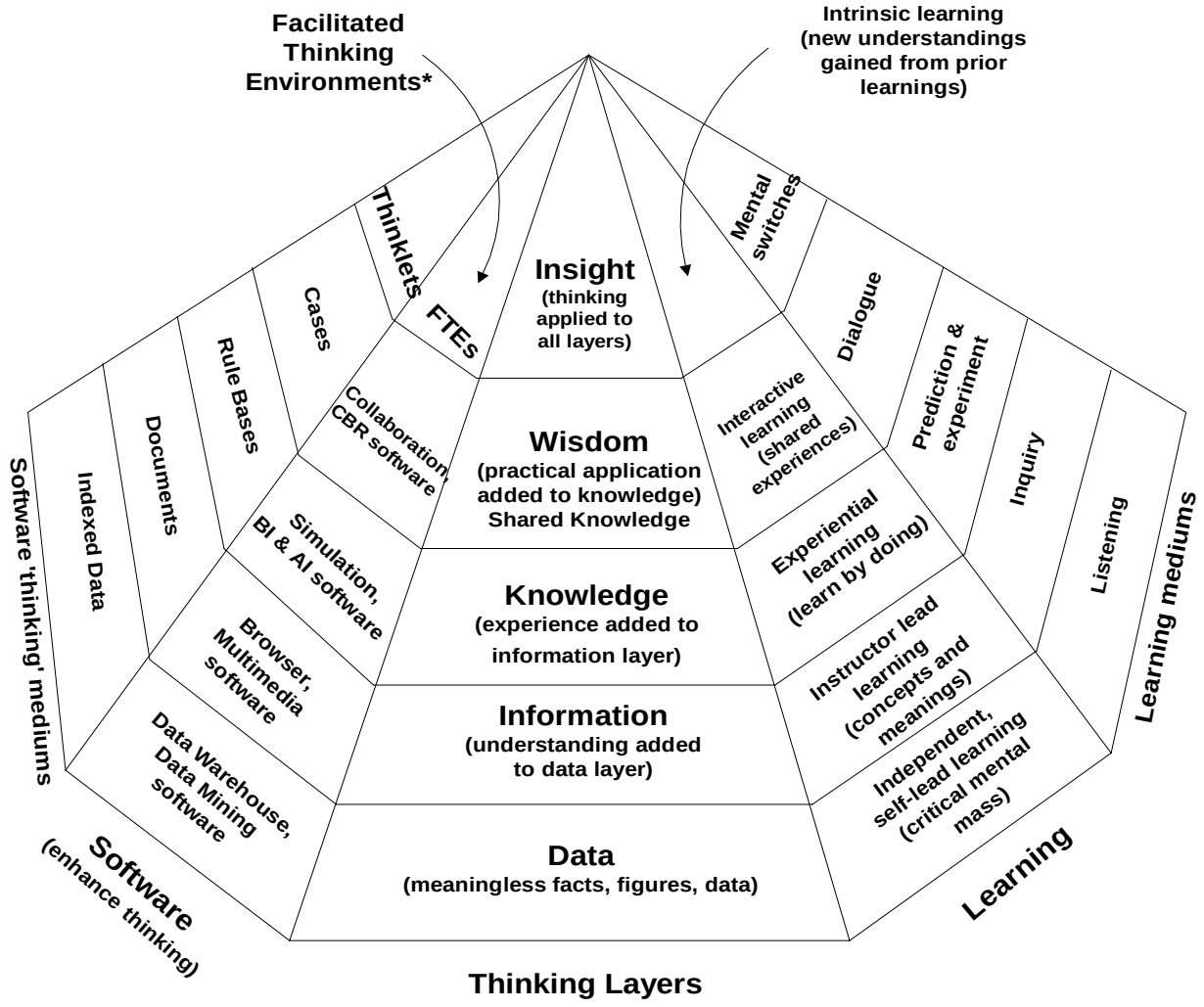
This *Thinking Emulation Grid* is the heart of a *Facilitated Thinking Environment*. The grid organizes all of the thinking components into a smoothly coordinated and integrated environment to guide thinkers along specific thought pathways and processes (*thinking strategies + thinking tasks/steps*) where just-in-time delivery of the right tools (*thought switches*) stimulate ideas within the right context.



Evolution of Software Technology & Thinking.

The evolution of computer technology presents new opportunities to enhance human thinking like no other time in history. The following *Thinking, Learning & Software Model* provides the guiding principles that lead to the development of *Facilitated Thinking Environment* software. In summary, the model constructs different *thinking layers*, and builds upon these layers to show how humans think and acquire understanding, and demonstrates how technology can improve human thinking along the way.

Thinking, Learning & Software Model



* MindSights™ FTE

Data Layer: The Data layer is the most elemental layer in thinking. For the most part 'data' is meaningless facts, figures and statistics that are represented by words, terminology, signs, numbers, etc. Thinking at this layer is essentially memory-based. It is about acquiring enough critical mental mass to allow reasoning to occur. From a computer software perspective databases and document repositories are analogous to our human memory. Just like expanding

human memory, the more data that is available in computer memory the more information that can be produced.

Information Layer: The Information layer is created when *understanding* is added to the Data layer. Information is acquired by putting data/facts into a context in which understanding occurs. Traditionally data/facts are given meaning through teacher-lead instruction. The critical success factor here is about acquiring the right amount of relevant information to allow effective reasoning "thinking" to occur. In the computer technology world the interactive nature of software can emulate teachers and allow students to interact with the software to discover meanings. These software products not only offer ways for students to learn essential data/facts but more importantly provide the context within which the data is mentally indexed for easier retrieval and association.

Knowledge Layer*:* The Knowledge layer is created when *experience* is added to the Information layer. That is, knowledge is acquired when information becomes grounded in some reality. Typically this type of knowledge is obtained through hands-on learning and real life experiences. Simulation software becomes the closest way to acquire knowledge. Simulations can mimic real life situations so well that they prepare people for those situations without actually having to be in them. Simulation software helps people gain knowledge in the same context that they will use that knowledge. By using computer-based simulations, we can vastly expand knowledge and the range of things people can learn from 'experience'.

Wisdom Layer*:* Although it is very important for people to have wide and profound knowledge, it is more important to acquire wisdom. Wisdom is acquired when *practical application* is added to the Knowledge layer. While wisdom can be gained when individuals put their knowledge into action, wisdom can more broadly be gained through collaboration and the sharing of experiential knowledge. The critical success factor for gaining wisdom is having a 'shared space'. Today physical meeting rooms provide the most common shared space. Shared electronic workspaces on the Internet are evolving another way people will share experiences. As we move into an era of more complexity, we will require more collaborative wisdom from people who have a variety of different knowledge's and experiences.

Insight Layer: Insight is the highest learning layer. It represents the power of the mind to form mental images or concepts of something that is not real or present. Gaining insight is about creating

conceptualizations based on understandings acquired from all the other layers. The problem is all the previous thinking/learning layers naturally create mental routines or scripts that generally lead to a few dominant-thinking patterns. While scripts are necessary and account for most of our thinking, going by the script all the time can prevent people from seeing anything other than what can be applied to the script. Scripts in essence prevent us from gaining insights by channeling thinking down rigid mental pathways.

The critical success factor at this layer is people's ability to think out-of-the-box (out-of-the-script). From a technology standpoint, helping people gain insight is the purpose of new Facilitated Thinking Environment software. FTEs use thought stimuli that are designed to break scripted mental patterns by prompting users to react to "**Thinklets".**

MindSights: Facilitated Thinking Environments (FTE)

A first of its kind FTE, MindSights is a suite of 18 softbooks integrated into a single environment that can enhance virtually any thinking task. While the environment surrounds an individual, individual environments can be linked together to form an entire collaborative team work environment. We truly believe that MindSights will become known as the genesis of a new era of thinking productivity products!

MindSights™
Facilitated Thinking Environment