



U-SIT And Think News Letter - 66

Updates and Commentary

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Unified Structured Inventive Thinking is a problem-solving methodology for creating unconventional perspectives of a problem, and discovering innovative solution concepts, when conventional methodology has waned.

Dear Readers:

- . The discussion of intuition-logic struggle, begun in NL_63, is continued here. This is an ongoing exercise in sparking intuitive creativity. While reading keep listing your ideas as they come to mind.
- . My ideas are numbered sequentially in these mini-lectures beginning with NL_63.
- . Back issues of the USIT and Think Newsletter are available on request.

3. Mini USIT Lecture – 66

5. Heuristics for Solving Technical Problems

Continuation of “The Intuition-Logic Struggle”

(From NL_65) Can you think of other points of contact for analysis of the keyboard being too large?

NL_66

Intuitive insights from function identification

The obvious way to answer this question is to begin identifying functions of the keys. These come to mind:

- Present information to the user
- Transduce position information into electrical information
- Detect position change
- Provide logical access to their information (speed typing via a rote pattern)
- Provide convenient access to their information (visual cues)

When I typed “present information” (a seed) it brought to mind (recall of experience) the overlays for keyboards (intuitive result of seeding). Overlays are often used to aid one’s learning of the features of a software system (logical expansion on intuition). Recall of overlays was an immediate suggestion that much more information could be made available on a keyboard than the QWERTY section provides (a new line of intuitive thought). This could be worded into an unwanted effect as, for example, too low information density. That is, given the size of a keyboard, it seems that potential information space goes unused. (I hope Madison Avenue ad writers don’t get wind of this!)

Unwanted effect: “Keyboard information density is too low.” Writing this statement started a flow

of ideas.

Let me get my intuitive ideas out of the way:

19. Inlay key tops with miniature digital screens for displaying information – such as keyboard overlays for specific software.
20. Make screens visible according to ambient light conditions.
21. Offer software developers access for showing information on miniature key-screens (a new product opportunity).
22. Use mouse pointing to select monitor icons for activating software-specific information displays.
23. Enable automatic illumination of key sequences for software training – such as learning a software package, performing computer diagnostics, computer hardware and software installation, etc.
24. To reduce typos, lock keys from accidental striking that are not needed in a particular software package.
25. Electromechanically retract unneeded keys.
26. In periods of no finger-key contact, mechanically raise the F and J keys to enable quick QWERTY hand positioning for touch typists.
27. Put detectable vibrations in keys for tactile identification by blind typists and touch-typing students.

Now that those are recorded let's begin USIT logic to seed more intuitive inspiration.

Intuitive insights from object identification

I'll begin with object identification and selection. Keys are obviously relevant objects. However, information is the more important. In the above list two forms of information objects were mentioned, visible and tactile. Audible information could be useful but taste and smell are not likely candidates (or are they?).

Visible information can be in the form of single color illumination, varied colors, varied intensities, and various patterns of multiplexed illumination, intensity, and color.

28. Encode key information in forms of multiplexed illumination, intensity, and color.
29. Encode key information in forms of multiplexed sound intensity and frequency.
30. Encode key information in forms of multiplexed vibration intensity and frequency.

An important contact with information is a key and the information it displays. This immediately provides a point of focus. Digital screens imbedded in key tops have been mentioned.

31. LED patterns could be embedded in a key top to enable multi-functions for keys under software control.
32. Keys could have foggy windows with etched messages to be illuminated when

needed.

33. Keys could have distinguishing grooves or bumps for tactile information.

Another important object that contacts information is the user. This makes me think of kinds of information the user might find useful on a keyboard.

34. A running tally of total word count when using word processors.
35. A running tally of file size when using image-processing software.
36. The directory path of the file being edited.
37. A memory-usage gauge.

Another point of contact already alluded to is sensor stimulation: by visual, tactile, and audible stimulation. This list could include thermal stimulation from hot or cold keys.

38. Encode keys using temperature modulation.

The idea of rote key pattern, mentioned above, brings to mind a subset of keys that are mechanically elevated while playing games.

39. An elevated pattern of keys for game software.

Intuitive leaps to creativity

“Leaps” come in various sizes. And size has various metrics. My big intuitive leap may be a piddling step in your mind. There is one distinguishing characteristic of any leap of intuition, namely, that it is not obvious. That is the implication of leap. Logic, by contrast, flows in incremental steps of accepted rational. These steps can be so small as to render their reading very dry. A good example is a mathematical proof.

The complimentary interaction of logic and intuition as we solve problems is composed mostly of small leaps of intuition. Ambiguity of a metaphor eludes logic and seeds the subconscious to proffer a not so obvious idea, for which the conscious immediately fills in the logical connections.

When I typed, “Keyboard information density is too low” (above #19), it immediately seeded the not so obvious idea, “#19 Inlay key tops with miniature digital screens for displaying information – such as keyboard overlays for specific software”. Looking back, maybe “information density” connected subconsciously to recorded experience with computer screens full of information. A month or so ago, I had given a lecture on digital photography in which I discussed the information density of a computer screen. As I typed the first part of the sentence logic seems to have stepped in and offered simple expansion of the idea “such as keyboard overlays for specific software”.

In ordinary conversation a speaker’s words may somehow metaphorically inspire a response from a listener that seems to be a way off track. Somewhere there is a logical connection within the listener’s mind that is not obvious to others present. I can hear it now: “Why did you say that? It isn’t logical!” When the responder takes a moment to logically clarify the response it suddenly makes sense. Intuitive leaps have different sizes in different minds.

The kinds of intuitive leaps that are considered to be innovative or creative are those not obvious to one's peers – people of similar training and background. This is a measure used by the US Patent Office. It requires a “non-obvious step” as a requisite for a patent.

The big leaps of non-obviousness come from minds packed with relevant information and long periods of analyzing, trial-and-error seeding, testing, modifying, and persisting, interspersed with resting and digressing. Periods of rest and digression allow the subconscious to organize recent memory and play with unusual associations that logic of the conscious would not allow. Insatiable curiosity can carry anyone there.

Heuristic: Foster intuitive leaps to discover creativity.

7. Papers and essays

The following materials can be read by clicking on their titles. Links are also available on the USIT website (www.u-sit.net/Publications)

1. [“Injecting Creative Thinking Into Product Flow”](#)
2. [“Problem Statement”](#)
3. [“Metaphorical Observations”](#)

8. Other Interests

1. Have a look at the USIT textbook, “Unified Structured Inventive Thinking – How to Invent”, details may be found at the Ntelleck website: www.u-sit.net (*Note*; not at www.ic.net)
2. USIT Resources Visit www.u-sit.net and click on Registration.

Publications	Language	Translators	Available at ...
1. Textbook: Unified Structured Inventive Thinking – How to Invent	English	Ed Sickafus (author)	www.u-sit.net
2. eBook: Unified Structured Inventive Thinking – an Overview	English	Ed Sickafus (author)	www.u-sit.net
	Japanese	Keishi Kawamo, Shigeomi Koshimizu and Toru Nakagawa	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com/www/usit/register_form.htm
“Pensamiento Inventivo Estructurado Unificado – Una Apreciación Global”	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
3. eBook “Heuristics for Solving Technical Problems – Theory, Derivation, Application” -- HSTP	English	Ed Sickafus (author)	www.u-sit.net
“Heurísticas para Resolver Problemas técnicos – Teoría Deducción Aplicación”	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net
4. U-SIT and Think Newsletter	English	Ed Sickafus (Editor)	www.u-sit.net
	Japanese	Toru Nakagawa and Hideaki Kosha	www.osaka-gu.ac.jp/php/nakagawa/TRIZ/
	Korean	Yong-Taek Park	www.ktriza.com .
Mini-lectures from NL_01 through NL_63	Spanish	Juan Carlos Nishiyama y Carlos Eduardo Requena	www.u-sit.net click on Registration

Please send your feedback and suggestions to Ntelleck@u-sit.net and visit www.u-sit.net

To be creative, U-SIT and think.