

Create Innovation Now

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ABSTRACT

The ability to be innovative is becoming ever more critical for the statistical programmer. As the working environment increases in complexity, how do we counter this with an increase in our own creative potential, an ability to create and support new innovative ideas, to find the right solution for the question at hand?

This paper will demonstrate two things:

First, how to actively develop an innovative environment in your own project. What attitudes and perspectives create innovation? How do we enable our colleagues to be more innovative? How do we allow and nurture ideas in our current environment? References will be made to the social technology of Theory U from M.I.T.

Second, how to increase our own creative potential. There are many ways of doing this but which works well with highly logical people such as statistical programmers or statisticians? What is most practical to work with? References will be made to well known examples, showing how this creative thinking process works.

INTRODUCTION

We live in a moment in time where our working environment is in a constant state of change. This is not easy. Back in the middle of the American civil war, Abraham Lincoln was in a much worse situation, where even the survival of the country was in doubt. It was at this most difficult of moments that he wrote one of the most famous speeches ever given by an American president. At Gettysburg, at the dedication to a National Soldiers Cemetery, he gave the following address:

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation, so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate, we can not consecrate, we can not hallow this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us, that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion, that we here highly resolve that these dead shall not have died in vain, that this nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth.

This is one of the most famous and inspiring speeches ever made, at a time when the fundamental structure of the country was threatened. All Lincoln had to achieve this was a pencil, a blank piece of paper and his own creative ability.

So how do you develop your creative ability?

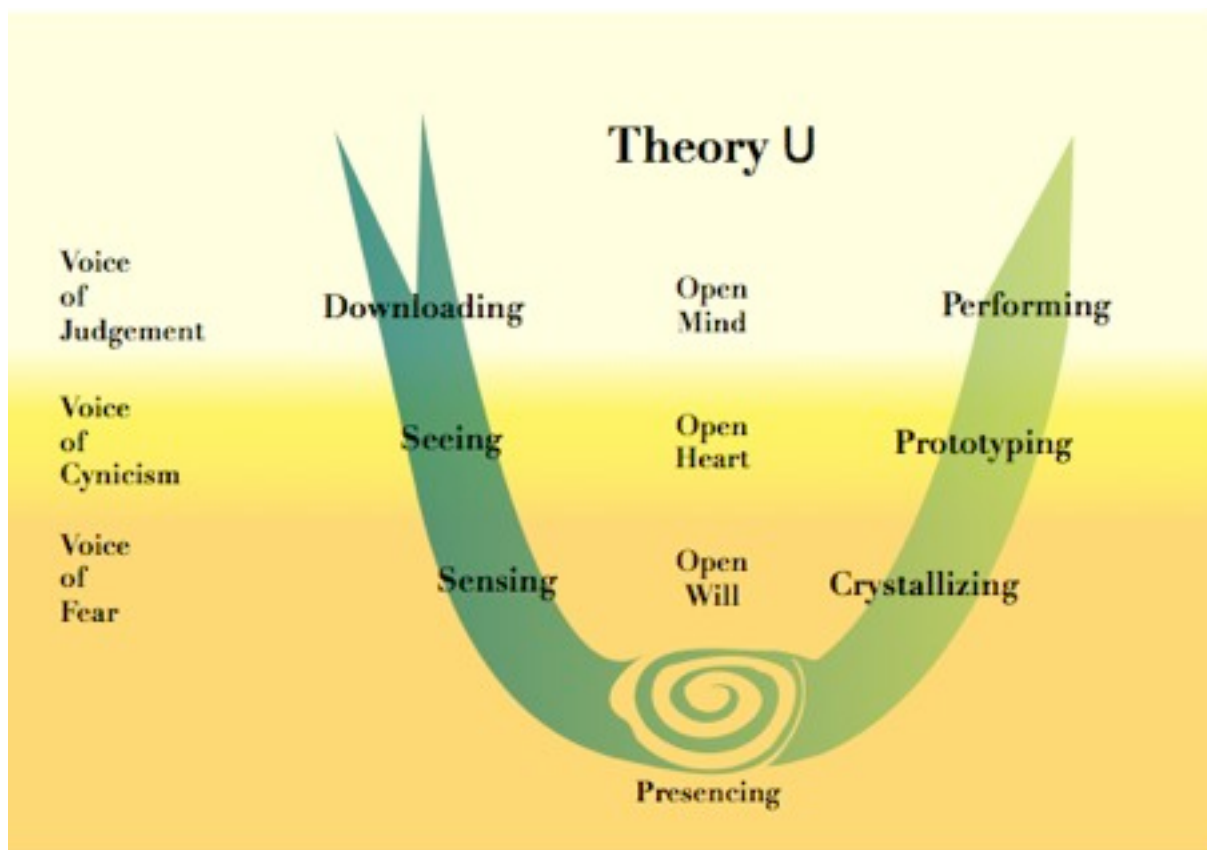
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This paper details two methods of creative development for logical people, one for groups, and one for individuals. Both are suited for structured thinkers such as programmers.

THEORY U IN PRACTICE

“Theory U” is a social technology from M.I.T that despite its youth is already well established as a powerful tool for generating ideas and establishing them in practice. This method was presented at PhUSE in Berlin 2010 and will not be gone into detail here. Instead, the application of Theory U will be described. For the interesting question is, what happens when we use Theory U in practice?

The method was used in a project in Roche. The statistical programming department had been working together with a Contract Research Organization (CRO) in a formal way for several years. This strict procedure was now being removed and each drug project being allowed to use its own way of working with the CRO. An international project was setup to identify the best practices that could be used to work with the CRO.



So how did this project and Theory U come together?

Theory U outlines a series of steps, Downloading, Seeing, Sensing, Presencing, Crystallizing, Prototyping, Performing. Our project moved through all of these stages.

The first step is downloading, which is getting into the mindset of the current situation. This was done by doing a survey of all the current drug projects that were working with the CRO, finding out what worked well, what needed changing, finding out what ideas and opinions were already existing. With these actions the team was thoroughly grounded in the current viewpoint within the company.

Then came the interesting turn- why not also do a survey of everyone in the CRO as well? This was the next step on the Theory U, suspending the current viewpoint and judgments found in the pharmaceutical company, and being

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prepared to see the view of someone else. This suspension of judgment is the second stage of the U; Seeing. This is "Seeing" from a different perspective, rather than just remaining in the previously established viewpoint. It is also remaining free of negativity; you are no longer criticizing another's point of view but incorporating their viewpoint into your field of vision.

This can naturally lead on to the next step in the U process; Sensing. In this you move to be in a situation where you have a perspective of the whole of the problem field, rather than just seeing things from your customary outlook. This requires a great deal of trust. This was also very much in evidence in this project. The members of this project displayed a "can do" attitude, and this helped form a strong confidence in the support of the others on the project.

Once you have reached a state of 'can do' attitude, trust, and suspended judgment, you are now in a situation of large innovative potential, the next step, which is Presencing.

And that is what happened on this project. The ideas flooded in. It is hard to describe such a creative moment. At the beginning of the project we had no idea how to proceed but now we had an abundance of ideas. Of particular note was the impulse to have the programmers in the CRO create their own mini-PhUSE, a day of giving papers to each other. This was done, much improving the motivation of the programmers there.

The next step is Crystalizing, bringing the ideas together, finding out what works and what does not. Here, sensitivity is required, treating other people's ideas carefully. What was also found to be necessary is to keep the trust in the group, not being offended if all the ideas are not taken up.

The next step in Theory U is prototyping. While this was not done in the traditional way, an interesting variation was done. The ideas and advice was summed up in a guidance document and this guidance document was developed in a way, which made for a high quality output. In a series of teleconferences, every team member took it in turns to read out the document, which was then corrected and improved upon directly by all the other participants. This took time but ended with a very readable text. This method ensured the document flowed well, and doing it in a group assured that any stumbling blocks could be ironed out by the impulses of the other members of the project.

The document proved not only to be useful for working with one CRO but became useful for others working internationally with CROs. The project was a great success!

INDIVIDUAL INNOVATION DEVELOPMENT- HEARTHOUGHT.

Moving from group to individual work, the question that needs to be answered is, how do you enhance your own creative potential, to bring a deeper source of innovative possibilities to the table? For example, if you used to bring up three ideas, how do you expand your creative development so you bring up ten ideas? A simple way of developing creativity is to be creative- go and take evening classes in painting, for example. That is not appealing to everyone though.

If Theory U is a method of social innovation, which is suitable for people trained to think logically, what is a suitable method for rational individuals to use for them to become more innovative? Heartthought logic is a method that addresses this area and offers a possible solution.

Hearththought Logic

Physical	fixed, static, 'current status'.
Life	movement, rhythm, history, the 'doing', how we got here.
Mind	emotion, opinion, thought.
Self	decision, name, conclusion.

Here we need to build up a special logical view of the world. How we look at any particular situation can be split into four aspects:

Everything that is a description of the current stationary situation, that which is fixed. This is the Physical aspect.

Everything to do with time and movement, the history and development, how did we get to this position. This is the Life aspect.

Everything to do with the opinions, thoughts, emotions that exist about the position. This is the Mind aspect.

Finally, everything to do with the decisions around the subject. This is the Self aspect.

To illustrate the practical use of the model, let us look at some examples from everyday experience.

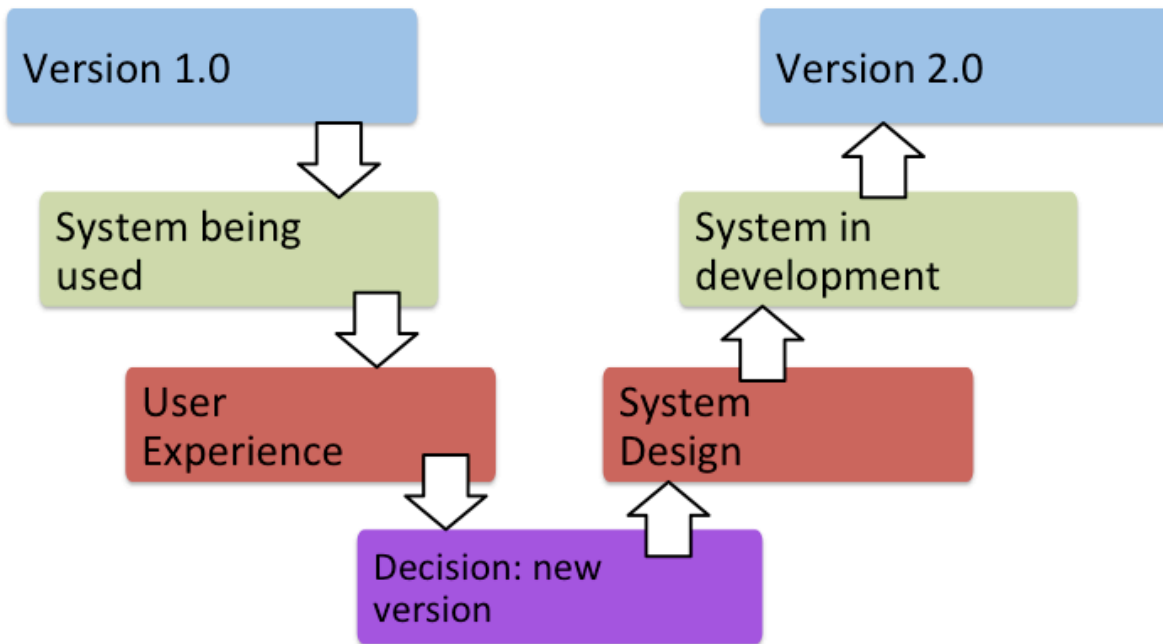
EXAMPLE- A CAR.

Let us illustrate this with an everyday example, a car. The Physical aspect is easy, the car itself, the wheels, seats, engine, etc. The Life aspect can be the process of building the car, the manufacturing process. The Mind aspect is the design of the car: is it a luxurious car, a fuel efficient car, a family car? The Self aspect can be the name of the car.

EXAMPLE- DEVELOPING A NEW COMPUTER SYSTEM.

A more complicated example would be the process of developing a new version of a computer system.

Project Development



The initial aspect is the Physical, the initial version of the system, stored on a disk perhaps. The next aspect is the Life aspect, all the users using the system. These users would feed back to the software house the good and bad points of the system. This feedback and the analysis of it forms the Mind aspect.

This would be looked at by a deciding body who would decide to invest in the next version of the system. This the Self aspect.

The software developers then get together and decide how the next version of the system will be built- this is the second Mind aspect of the process.

The actual programming of the new version is the next Life aspect of the process. Finally, the new version of the system is finished, the final Physical aspect.

USING HEARTHOUGHT IN EMAILS.

How can Hearthought be used in everyday life? While this takes a small amount of learning, it is not difficult to use, the simplest way is when writing emails.

For example, take this email from an employee to their manager:

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I have decided to resign to start in a new job. I wanted to inform you about my position. I was approached by a head-hunter for a position in another company and have been for a series of interviews. After thinking this through I spent some time comparing both jobs.

It is rather abrupt! Simply re-ordering the sentences into physical, life, mind and self:

Physical:	I wanted to inform you about my position.
Life:	I was approached by a head-hunter for a position in another company and have been for a series of interviews.
Mind:	After thinking this through I spent some time comparing both jobs.
Self:	I have decided to resign to start in the new job.

This is easier to read and is much easier to digest. Although it is bad news it is easy to comprehend in this style, the logic gives it a common sense, simple to read form.

HEARTHOUGHT USAGE- INTERNATIONAL PROJECT FACE-TO-FACE MEETINGS.

Consider an international project with multiple people working in several countries. This is something that happens frequently in large pharmaceutical companies. When the work is routine and everyone knows what they are doing, the fact that the project is geographically spread out is an inconvenience. What of the case of a new project where things still have to be worked out? Let us look at this situation through the Hearthought logic.

The physical part is easy, this is the final product the project is creating, for example the analysis programming system. The life part is also easy, this is the actual work done in building the system, for example programming. The mind part is the design of the system. The self part is the management of the system.

So which part of the work can be done in separate locations and which part is best done face-to-face? The life part, the programming can obviously be done at different sites, we do it all the time. The physical part also is not dependent upon site location, the programming systems are rarely on our desks. The self part, the management of the system is also site independent, if the manager wishes to get a task done they can just pick up the telephone and speak to someone.

But what of the Mind part, the design of the system? As soon as we get into the area of design, this is where we may need face-to-face meetings. It can be very difficult to explain an idea over the telephone or even in a videoconference. The essential part of getting multiple people all exchanging ideas together, going into intricate explanations to promote understanding is best done in face-to-face meetings. This is not to say this is impossible, rather that using face-to-face meetings for design, idea exchange etc is the most effective use of such meetings.

THEORY U AND HEARTHOUGHT.

The Hearthought example of the project development is a seven-part structure. This is an extended structure compared to the instance of a car, which is a four-part structure. This seven-part structure of the project development is not only similar to the Theory U structure. It is exactly the same: they both use the same logic.

Hearthought can also be used to help with the Theory U process. After downloading the next stage is Seeing, removing yourself from your normal viewpoint in the world. Hearthought can do this- by using the hearthought logic you are already taking a step away from your normal perspective. Hearthought can also help with the next step in the Theory U process, Sensing. Use of Hearthought has a tendency to increase your concern and appreciation of your colleagues, energizing the first step into Sensing.

SO WHAT DID ABRAHAM LINCOLN DO?

Physical aspect:

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Life aspect:

Now we are engaged in a great civil war, testing whether that nation, or any nation, so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

Lincoln then mixed up the Mind and Self aspects, creating an overall three part form:

But, in a larger sense, we can not dedicate, we can not consecrate, we can not hallow this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us, that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion, that we here highly resolve that these dead shall not have died in vain, that this nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth.

Gettysburg Address



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SUMMARY

This is a logical way of structuring your thinking about almost any topic, and a method which then increases your own innovative potential.

This is called Hearthought.

IMPLEMENTATION RECCOMENDATIONS

Both technologies are easy to implement. Theory U is already a well recognized technology with its own user forum and experience base. It is something which can be readily applied to new projects. Hearthought can be used every time a document is written, as is indicated from the email example.

CONCLUSION

Our world is becoming an ever more complex place. To solve the problems we face we need new ideas and processes to achieve the best possible outcome. Theory U is a social technology, which allows us to bring out our creative ability in teams. Hearthought allows us to develop our own innovation potential in a logical way. Using new processes such as Theory U and Hearthought, will significantly boost our ability to provide the best possible outcome to the work at hand.

ACKNOWLEDGMENTS

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RECOMMENDED READING

Theory U Leading from the Future as it Emerges The Social Technology of Presencing by Otto Scharmer, SoL, the Society for Organizational Learning.

[PhUSE 2010 Theory U- Social Technology for Innovation](#)

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