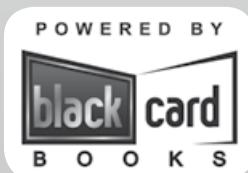


BREAK THE PATTERN

The Science of Transformational Value Creation

Dr. Ahmad Rahman Songip



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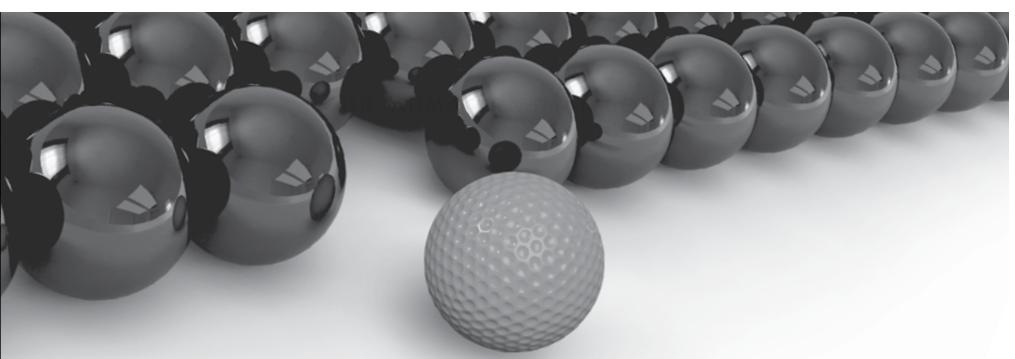
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BREAK THE PATTERN

The Science of Transformational Value Creation

Dr. Ahmad Rahman Songip





Endorsements

"Innovation is a word that often makes people confused. This book definitely helps to get a better understanding on it."

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Deputy Minister

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"Break the Pattern is an excellent book with hands-on exploration of organizational transformation, its principles, processes, and impact. As an ardent believer in the Transformational Leadership style myself, I am delighted to see that Dr. Ahmad Rahman Songip has both challenged and encouraged us to wholeheartedly embrace transformation, so that we create sustainable value together."

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"I like the concept of KISS—Keep It Simple and Satisfying, as outlined in *Break the Pattern*. It is a great tool to test the simplicity of the tagline, slogan, or motto of an organization."

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"In today's world of rapid transformation and epic challenges, breaking from the status quo through creativity and innovation tantamount to attaining personal triumphs, organizational achievements or business success above par. Kudos to Dr. Ahmad for his ingenuity in creating an excellent understanding of transformational value creation. *Break the Pattern* is indeed an inspiring guide for everyone in both the private and public sectors who is aiming to have a mindset change and gain his or her value creation accomplishments."

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"This book uncovers the secret recipes of very successful corporations. It is definitely a book worth reading by entrepreneurs."

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"This book created an elegantly simple mathematical equation, linking creativity and innovation. Brilliant effort!"

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"In today's fast-paced competitive landscape, it is more important than ever for companies to speed up their change processes and create transformational value. Dr. Ahmad has developed a compelling case for the urgency to change and presents a powerful framework for leaders to follow. I highly recommend *Break the Pattern — The Science of Transformational Value Creation*—it is an inspiring read and a catalyst to take action."

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Managing Director, SKF Malaysia Sdn. Bhd.
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"Dr. Ahmad has, through this book, provided a sneak peek into the accelerated changing world that many winners had dealt with their situation victoriously—in the world that is volatile, uncertain, complex, and ambiguous. He advocated breaking through the conscious mind, bound by the conventional and orthodox, is the answer. In the world of transformation, tasks seldom get completed as the next wave of change continues to set in. This book nudges those who are still pondering how others have risen above all odds and became winning leaders. The hidden question in this book is why we have to struggle with our subconscious mind of reasoning that is conditioned by specialist knowledge, which produces a multitude of reasons via confined and structured thought process to find a panacea for all things. I would encourage everyone to at least attempt to read this book to kick-start the momentum of widening insights and perspective as a prelude to venturing into the more turbulent areas, such as tackling digital business disruption."

—**Dr. Ng Boon Beng**
Director, ASEAN Regional – Deal Management, Oracle Corporation
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"*Break the Pattern* offers a framework for transformational value creation based on real experience, not theory. A must-read for anyone interested in creating their own destiny."

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"This book explains transformation, and explains it well. A good read for those who aspire to embark on the journey. Many have tried and failed. Hopefully, readers of this book may gain some wisdom and tips on how to survive."

—**Muhibbin Firdaus Azharuddin**

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"This book is a mandatory reading for our Technology and Innovation Management module for our Master Program and short courses. Local and international students and participants have been consistently giving five-star ratings to Dr. Ahmad's module. Congratulations and keep up the good work!"

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"I find the book as very refreshing... simple things were used as examples with detailed narration that eventually serves as a basis for a significant concept. Without a doubt, Dr. Ahmad has catapulted himself as another great thinker of innovation. This book clearly exemplifies his profound knowledge on the subject and years of immense experience in and outside the academic world. Time will prove that this book will 'click' the minds of many thinking individuals and prove to be an inspiration to many individuals growing up in the same ecosystem."

—**Sazali Yahya**

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"The similarity between Ohm's Law with $A = R \times S$ is remarkable. I called it the Ahmad's Rule of Success. I just realized that $A = R \times S$ is after the name of the author. Brilliant!"

—**Dr. Roslan Yusoff**

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"The beautiful recasting of the intricate human mind that individually needs to undergo transformations before it has the ability and courage to jump off from one's established inner quantum roundabouts, but not without one's conscious long hours of never ending ups and downs spreading over years of self-sacrifices in pursuing determined targets for collective results that may eventually translate into personal successes and achievements... let's dare to *Break the Pattern*."

—**Dr. Mustaza Hj. Ahmadun**

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"Based on my prior experience as a deputy president and a board member in a crude oil pipeline company for 11 years, I strongly recommend *Break the Pattern* to those who want to improve their managerial skill."

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"A simple yet refreshing explanation of transformational value creation. I like the simplicity of an egg to explain the concept of transformational value creation. From now on, I see this ordinary egg from an extraordinary perspective."

—**Dr. Faizan Ali**

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"This is a very timely and interesting topic on which the author embarked on. The whole book is written in such a fashion that made it easy to understand for the readers from any discipline. Lots of relevant examples are provided, which not only create the interest for the reader but also it helps the readers to understand the subject matter with no difficulty. The author has put tremendous effort to make the book interesting and provocative."

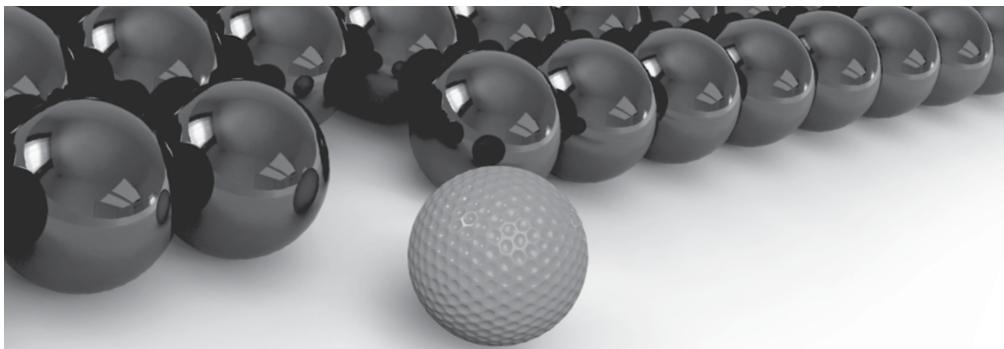
—**Dr. Farzana Quoquab Habib**

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"*Break the Pattern* is a very interesting and easy to follow book with insightful examples. I was a member of Dr. Ahmad's consulting team with the plantation company, and not only they achieved the goals, the consulting project managed to strengthen and bring out the best out of the organization."

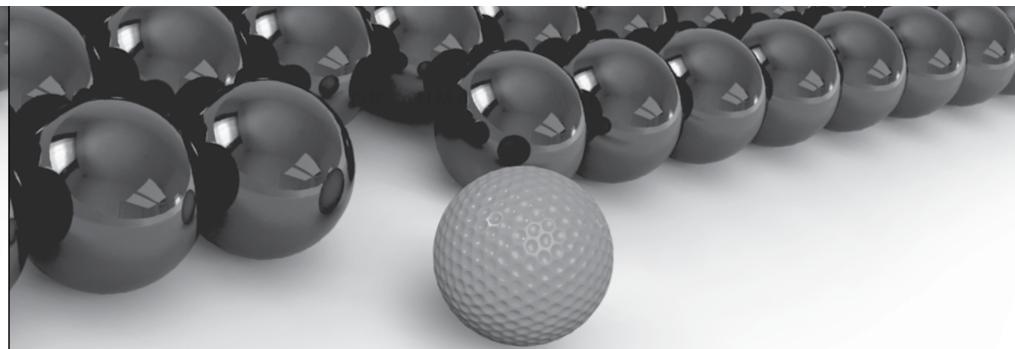
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Dedication

This book is dedicated to my father, mother and siblings who inculcated the thirst of seeking knowledge in me; my wife Anisah for her continuous support and understanding; our five children, Nurul Husna, Ahmad Hazim, Ahmad Hanif, Ahmad Hakim, and Ahmad Hilmie; our grandchildren, Maryam Nur'izza and Ahmad Hadif Ziqri; and our incoming descendants. I challenge all of them to utilize this book to create transformational value creation for their own brighter future.



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I sincerely thank you all.

“
Insanity is doing the same thing over and over again and expecting different results.

—Anonymous



Preface

This book is written based on my own personal journey in doing and managing research and innovation in the university and the corporate world.

Upon graduation with a Doctorate in Chemical Engineering from Kyoto University in the early 1990s, I embarked on an ambitious research program after getting huge grants from the Malaysian government. Unfortunately, research and innovation ecosystem in Malaysia was only in the beginning stages at that time. Frustrated with so many bureaucratic procedures that slowed down my research progress, I decided to take unpaid leave and joined a leading chemical company as a general manager.

My industrial experience exposed me to a totally different sphere: The world of management. It was an alien knowledge and skill to me. So, I was on a very steep curve, learning the ropes while managing five companies within the Chemical Division of the listed company. I found out that it was a much more exciting feat, creating value by managing innovation compared to doing research in the laboratory.

DR. AHMAD RAHMAN SONGIP

I was forced to cut short my industrial stint due to the Asian financial meltdown in the late 1990s. Upon returning back as an academic, I offered myself to help out the university to turn around ailing business units. I also started teaching modules on creative problem-solving, innovation management, project management, and entrepreneurship management as well as supervising graduate students in the area of innovation management.

Equipped with practical experiences from industry and successfully re-engineered ailing entities in the university, I started to offer training and consulting services in industry based on the concept of *Break the Pattern – The Science of Transformational Value Creation* - together with my colleagues and students.

The most challenging assignment to date was conducting a series of workshops, based on the content of this book, with the current and future leaders of the institutions of higher learning in Malaysia in Akademi Kepimpinan Pendidikan Tinggi (AKEPT), the training arm of the Ministry of Higher Education Malaysia. I was grilled, challenged, and scrutinized by the most experienced academic leaders; some of them were senior professors and deans of management and business schools as well as heads of corporate strategy departments. Thanks to the Almighty God, I have survived!



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The Way Forward

References

Brief CV of the Author

Speaking & Training Services Based on *Break the Pattern*

**Testimonials from Past Participants of Training Workshops
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PART I

Break the Pattern

Chapter 1:
Transformational
Value Creation

Chapter 2:
Framework for
Transformational
Value Creation



TRANSFORMATIONAL VALUE CREATION

You may have this routine every morning: One or two eggs to start your day. You may have them raw, half-boiled, boiled, bull's-eye, or scrambled. Since it is so routine, you may prepare and eat them almost unconsciously. But, if you consciously think about the eggs that you just had, you may discover a very amazing principle.

Eggs are the cheapest form of protein. They are fulfilling. They are easily available anywhere. Any grocery store, no matter how small it is, sells eggs. They have become *the* ingredient of any prepared food from the cheapest food sold by the roadside hawkers to the most expensive cuisine sold by six-star restaurants.

You have just witnessed an interesting concept in the transformational value creation of the humble egg. Its value could become double, triple, quadruple, or even centuple (100 times) by the time its shell is broken and its content is transformed to other valuable products.

As an example, a fried bull's-eye egg in a typical school canteen in Malaysia would cost about RM1.00. The fresh egg costs about RM0.30 per piece. Say the cost of frying, labor, rental, tax, and others may cost another RM0.20. Hence, the total production cost to fry an egg is about RM0.50. The return on investment (ROI) for this simple example is 100%, or, in simpler words, the egg has doubled its value.

Now, imagine the numerous delicious foods that could come from an egg. Omelets, egg tart, ice cream, and cheesecake are examples of food that increase the value of an egg in that order.

You might notice that there are few core principles that emerge in producing those high value-added and delicious foods.

The *first principle* is that the shell of the egg has to be broken! If it is not, those foods are not going to be in existence at all to fill up your hungry tummy. Also, unbroken eggs that lay on the kitchen shelf for a long time would eventually become rotten. Rotten eggs give negative value.

The *second principle* is that the egg has to undergo a transformation process. The gel-like egg yolk and transparent white egg have to be physically transformed into a solid yellowish and fluffy scrambled egg or that creamy cheesecake. From a chemistry point of view, the short protein chains of the raw egg have been polymerized into longer chains of polymer that give rise to the harder physical properties.

For that transformation to happen, some effort is required to effect the transformation process. The eggshell has to be broken by a force. Heat has to be applied to the egg to transform the physical, chemical, and biological natures of the egg.

The force to break the shell could be from outside or within the shell. The former requires an external force to be applied. For example, a cook may use a gentle force to just break open the shell and let its content glides out of

the shell. The cook will apply the right amount of heat to transform the liquid egg into delicious food to serve his/her customers. Obviously, this cook has created a positive value creation to the egg.

If the egg were to be hatched, the mother hen has to incubate the egg by sitting on the egg to provide the required appropriate temperature and humidity for the liquid egg yolk to be transformed biologically into a living chick. On a modern farm, the hatching is done in a controlled hatching room. Once the time has arrived, the cute chick inside the shell will use its own beak to peck at the shell to break it and emerge into the new world. What would be the ROI from an egg that becomes a new chick? I would say it is so big a number that it may go to infinity!

The *third principle* is that the degree of value creation depends on the intention or mission of the person who does the transformation. A cook that fried the egg for the school canteen may create an ROI of 100%, whereas if he fried the same egg to serve a client in a five-star hotel, the ROI may go over 300%!

A farmer who intends to hatch the egg for a new chick has to invest in providing the right ecosystem for the incubation process. He knows very well that his investment delivers him an ROI of infinity!

On the other hand, an angry protestor may throw the egg by force to his or her targeted enemy. Due to this high force, the eggshell is crushed and its content is splashed on the face of his/her nemesis. The crushed egg obviously has yielded a negative value creation.

I called the above three principles as "the principles of transformational value creation".

Differences between Change and Transformation

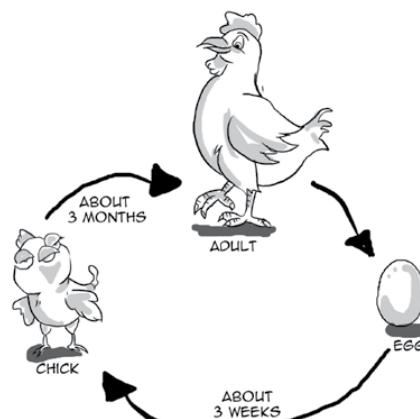
Many people are confused about the definitions of change and transformation; hence, they always use both terms interchangeably.

Change is defined by the Oxford English Dictionary as “make or become different”. Transformation, on the other hand, is defined by the same dictionary as “a marked change in form, nature or appearance”.

From the dictionary definition, it is then clear that “transformation” is a subset of “change”. Transformation should only be related to any “significant changes” that result in changes in form, nature, or appearance.

In the life cycle of a chicken, as shown in Figure 1-1, transformation happens when the egg becomes a chick. There are obvious significant changes in the form, nature and appearance between the egg and the chick. The liquid form of the egg content was transformed into a solid form of a chick. The inert nature of the egg content was transformed into a living chick. The oval shape of the egg content was transformed into bird-like shape of a chick.

Figure 1-1: Life Cycle of a Chicken



Transformation also happens when the egg is fried, boiled, or becomes an ingredient for a cheesecake. The form, nature, and appearance of the raw egg are so significantly different from the end products.

Transformation in an organization may be a bit difficult to be observed, since the “marked change in the form, nature, or appearance” may be deceiving. An organization may change its form, nature, and appearance by changing its logo, corporate color, title of positions, structure, uniform, or working hours; moving to a new and futuristic building; or even changing its businesses—but the inner working processes and mindset of the staff are still pegged at the status quo. Since the human capital is the one that produces results, having the same mindset ensures more or less the same outputs and outcomes.

Indicators for Transformation in an Organization

Hence, we need indicators that could be used to categorize whether a change in an organization is transformational or otherwise.

Idris Jala, the CEO of PEMANDU of Malaysia, suggested that for a transformation to happen in any organization, “it must operate differently (the doing or action) and it becomes a totally different organization (the being or character).”¹

By taking the above example of an egg, breaking its shell is the first obvious visible action to be taken to start the transformational journey of the egg. The eggshell has been designed by its Creator to be the protective element that confines its content in its place, that is, to maintain its status quo. Once the eggshell is broken, the status quo immediately disappears and its content is ready for the transformational journey as intended by the cook.

The first indicator of a transformation is whether the entity has broken its pattern or not.

This book suggests that the first indicator of a transformation is whether the entity has broken its pattern or not. According to Merriam-Webster Dictionary, one of the definitions of pattern is “the regular and repeated way in which something happens or is done”.

In this book, pattern is defined as the status quo that maintains its form, nature, or appearance. Pattern is the way of doing things, the norms, the routines, the standard operating procedures, the policies, the rules and regulations, the structures, mindsets, skill sets, behaviors, and so on.

The current patterns in the organization have been producing the current level of performance, outcomes, and outputs. The only way forward to produce significant value creation is obviously by breaking those inherited old patterns and starting the carefully chosen new patterns—hence the title of this book, *Break the Pattern*.

A CEO that demands different results without breaking any patterns in the organization is an insane person. A popular quote defined insanity as “doing the same thing over and over again and expecting different results”.

The second indicator that this book suggests is by measuring the ROI of its value creation outcome, based on the patterns that have been broken. Taking the egg transformation described above, the ROI of any change that is worthy of transformational label should be greater than 100%.

Let us test these indicators with this simple question: When the chick grows to become a hen or a rooster, do you call it a change or a transformation? To answer this question, here are two basic questions that you can ask yourself:

1. Has the new entity broken its old pattern by operating differently and becoming a totally different entity?
2. Does the ROI of the changes deliver value creation greater than 100%?

If the answer to either of the two questions is no, then the change is not a transformational change. In the quality management circle, this change is called a mere “improvement”.

Subjecting the above example (chick to rooster) to these criteria, both give negative responses:

1. The old pattern is not broken. There are no significant changes in form, nature, or appearance from chick to hen or rooster. The chick and the hen go about their daily lives similarly. Although the chick has grown its size and weight to become a bigger hen or rooster, both maintain their basic form, nature, and appearance.
2. The ROI is also very much less than 100% since the cost of rearing chicks is expensive!

If you are the chairman of the board, managing director, chief executive officer of a corporation, or head of a government department, I guarantee that by asking these two simple questions, your top management team would start scratching their heads to look for creative and innovative ideas!

This book is intended to guide you through the application of *Break the Pattern* for your organization.

Framework – a set of beliefs, ideas or rules that forms the basis of a system or society for making judgments, decisions, etc.

—Oxford Advanced Learner's Dictionary

FRAMEWORK FOR TRANSFORMATIONAL VALUE CREATION



Everything in this world has a framework.

Our body is built around a bone framework that houses many subsystems that make us alive. Our car is built upon a framework called a chassis that houses many components that make the car drivable. Our house is built upon a steel and concrete framework to provide enough support to carry the weight of the whole house. The list of examples could go on and on.

Frameworks of things created by the Almighty God are perfect. It is a science, since science by definition is exact, replicable, and functional at any time, regardless of location.

Frameworks of things invented by human beings are always works in progress. Automotive companies have always striven to produce a better model of cars over the years. Civil engineers, architects, and contractors have always tried to find better ways to build better buildings.

Similarly, there is a need for a framework for transformational value creation. This book suggests a practical framework for transformation that you could implement and operationalize in your organization for value creation, based on the *Break the Pattern* concept, as described in Chapter 1.

There are two rules of *Break the Pattern* that allow transformation to happen, which would deliver higher value creation:

$$\text{Attitude} = \text{Resistance} \times \text{Skills}$$

and

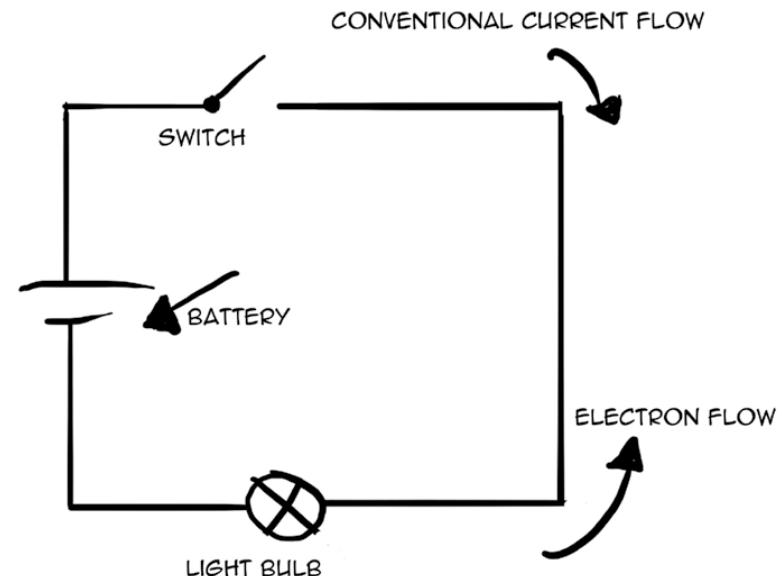
$$\text{Innovation} = \text{Creativity} \times \text{Transformation Effort}$$

Rule 1: Attitude = Resistance x Skills

The first rule of *Break the Pattern* is related to individuals in the organization. People are the primary resources of any organization. Organizations can only grow if the human resources in the organization have the right attitude, skills, and knowledge to create value from existing resources.

The first rule is analogous to Ohm's Law of an electrical circuit, as shown below, that is, $\text{Voltage} = \text{Resistance} \times \text{Current}$.

Figure 2-1: An Electrical Circuit



Voltage is the inner potential of, say, a battery, which pushes electrons to move, once the switch is on. The movement of electrons gives rise to Current that flows through a Resistance, such as a filament in a light bulb.

When current passes through a filament material, the resistance creates heat. Atoms in the filament material absorb energy. The electrons around the atoms become excited and temporarily reach a higher orbital, one that is further from the nucleus. When an electron jumps from one orbit to a lower orbit, it gives off energy in the form of a photon. According to the quantum theory of light, light exists as tiny packets, or particles, called photons.¹

Attitude, similar to voltage, is the inner potential of a human being to push oneself to overcome one's internal resistance to do certain actions,

Organizations can only grow if the human resources in the organization have the right attitude, skills, and knowledge to create value from existing resources.

Attitude is answering the "why" or the reason for one to do a certain thing that makes him/her move forward. The "why" is referring to the internal force or energy, as described by the third principle of transformational value creation in Chapter 1 that affects the transformation of the individual.

One of the worst internal resistances is the lack of knowledge. Knowledge is the foundation for one to move forward for oneself as well as for the organization. Without knowing the 4W1H (what, when, where, who, and how), it is impossible for a human being to go the distance.

A simple example may explain this. I believe you have a driving license. Why do you need it? The reason is simply because it allows you to be able to drive a car for you to go anywhere you want to be. It makes you independent, mobile, and productive. It allows some of you to own a status symbol by owning your dream cars, so you have a compelling and strong reason to have a license, no matter how expensive or difficult the process is.

But, before you can get the driver's license, you need to learn all the knowledge that is required for you to get it. You need to know the rules of traffic (the what), the right time to stop your car before the traffic lights change (the when), the place to renew your driver's license (the where), and who to report to when there is an accident (the who). The mastery of this knowledge is tested through the written test.

such as to wake up very early to beat the traffic jam on the way to work. Those repeated actions give rise to certain behavior, habits, and skills that are required to attain successes for oneself and for the organization that lead toward value creations.

Once you have passed the written test, then you have to undergo training on "how" to drive a car and practice all the knowledge that you have just acquired about driving. The "how" refers to the skill sets that allow you to do certain things to drive the car, to reach a certain destination that was set in your mind.

Despite all the knowledge and skills of driving that every driver has acquired, one question that is always being asked is: Why does the accident rate keep increasing over the years? The answer to that question is simply due to the negative attitude of the drivers.

Attitude is what gets the driver to reach their destination safely or otherwise. If the attitude is to drive carefully and follow all the rules of laws, the driver will reach the intended destination safely. If the attitude of the driver is to drive recklessly without any consideration to other fellow users of the road, the probability of the driver making mistakes is very high, and that could lead to fatal accidents to himself/herself and others.

Since creativity relies on the imagination of individuals, innovation always starts with creativity.

Since creativity is an attitude² and is closely related to intrinsic motivation,³ the first rule of *Break the Pattern* leads nicely to the second rule, as described below:

Rule 2: Innovation = Creativity x Transformation Effort

The second rule of *Break the Pattern* relates to an ecosystem, since innovation could not happen in isolation. "Ecosystem" could only be applicable in a community such as in a company, an organization, a country, a region, or even the world.

The U.S. National Science Foundation defines innovation as “a process, a series of steps that begins with imagination, and results in the creation of something of value for society”.⁴ Since creativity relies on the imagination of individuals, innovation always starts with creativity.

Rule 2 relates the two terms (creativity and innovation) in an elegant mathematical equation, hence simplifying the often-confusing, lengthy, and wordy definition of innovation.^{5,6}

To prove the validity of Rule 2, independently published data on the Global Creativity Index⁷ (GCI) and Global Innovation Index⁸ (GII) on 118 countries are tabulated alphabetically in Table 2-1 and plotted in Figure 2-2.

Table 2-1: List of the GCI and GII

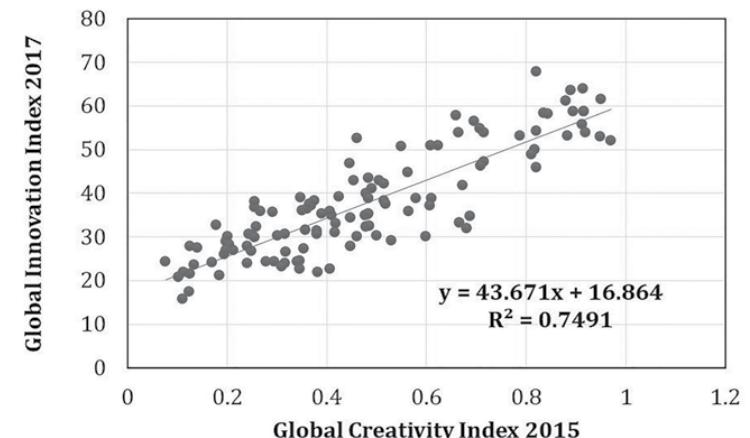
Country	GCI 2015	GII 2017
Albania	0.197	28.9
Algeria	0.279	24.3
Argentina	0.681	32
Armenia	0.269	35.7
Australia	0.97	51.8
Austria	0.788	53.1
Azerbaijan	0.244	30.6
Bangladesh	0.316	23.7
Belarus	0.598	30
Belgium	0.817	49.9
Benin	0.311	23
Bosnia and Herzegovina	0.253	30.2
Botswana	0.462	30

Country	GCI 2015	GII 2017
Brazil	0.667	33.1
Bulgaria	0.505	42.8
Burkina Faso	0.382	21.9
Burundi	0.125	21.3
Cambodia	0.213	27
Cameroon	0.408	22.6
Canada	0.92	53.7
Chile	0.611	38.7
China	0.462	52.5
Colombia	0.41	34.8
Costa Rica	0.607	37.1
Cote d'Ivoire	0.171	24
Croatia	0.481	39.8
Cyprus	0.446	46.8
Czech Republic	0.609	51
Denmark	0.917	58.7
Dominican Republic	0.38	31.2
Ecuador	0.532	29.1
Egypt	0.196	26
El Salvador	0.248	26.7
Estonia	0.625	50.9
Ethiopia	0.295	24.2
Finland	0.917	58.5
France	0.822	54.2
Georgia	0.449	34.4
Germany	0.837	58.4

Country	GCI 2015	GII 2017
Greece	0.484	38.8
Guatemala	0.449	27.9
Guinea	0.124	17.4
Honduras	0.319	26.4
Hong Kong	0.715	53.9
Hungary	0.673	41.7
Iceland	0.913	55.8
India	0.292	35.5
Indonesia	0.202	30.1
Iran	0.481	32.1
Ireland	0.845	58.1
Israel	0.665	53.9
Italy	0.715	47
Jamaica	0.502	30.4
Japan	0.708	54.7
Jordan	0.38	30.5
Kazakhstan	0.357	31.5
Kenya	0.417	31
Kuwait	0.351	36.1
Kyrgyz Republic	0.24	28
Latvia	0.563	44.6
Lebanon	0.317	30.6
Lithuania	0.49	41.2
Luxembourg	0.696	56.4
Macedonia	0.391	35.4
Madagascar	0.077	24.2
Malawi	0.135	23.5

Country	GCI 2015	GII 2017
Malaysia	0.455	42.7
Mali	0.347	22.5
Malta	0.55	50.6
Mauritius	0.477	34.8
Mexico	0.407	35.8
Moldova	0.256	36.8
Mongolia	0.37	37.1
Montenegro	0.516	38.1
Morocco	0.178	32.7
Mozambique	0.346	24.5
Nepal	0.343	24.2
Netherlands	0.889	63.4
New Zealand	0.949	52.9
Niger	0.185	21.2
Norway	0.883	53.1
Pakistan	0.24	23.8
Panama	0.482	35
Paraguay	0.303	30.3
Peru	0.418	32.9
Philippines	0.487	32.5
Poland	0.516	42
Portugal	0.71	46.1
Qatar	0.255	37.9
Romania	0.425	39.2
Russian	0.579	38.8
Rwanda	0.141	27.4
Saudi Arabia	0.362	36.2

Country	GCI 2015	GII 2017
Senegal	0.355	27.1
Serbia	0.484	35.3
Singapore	0.896	58.7
Slovak Republic	0.484	43.4
Slovenia	0.822	45.8
South Africa	0.564	35.8
South Korea	0.66	57.7
Spain	0.811	48.8
Sri Lanka	0.255	29.9
Sweden	0.915	63.8
Switzerland	0.822	67.7
Tajikistan	0.205	28.2
Tanzania	0.126	28
Thailand	0.365	37.6
Tunisia	0.26	32.3
Turkey	0.348	38.9
Uganda	0.197	27
Ukraine	0.518	37.6
United Kingdom	0.881	60.9
United States	0.95	61.4
Uruguay	0.688	34.5
Vietnam	0.377	38.3
Yemen	0.112	15.6
Zambia	0.103	20.8
Zimbabwe	0.113	21.8

Figure 2-2: Relationship between Innovation and Creativity

Apparently, there is a strong linear relationship between the innovation and creativity indices with $R^2 = 0.75$. Hence, a mathematical formula could be written as:

$$\text{Innovation} = m \times \text{Creativity} + c \quad (\text{Equation 1})$$

where "m" is the slope of the line and "c" is a constant number.

Assuming "c" goes to "0" (since innovation is zero when creativity is zero), Equation 1 becomes:

$$\text{Innovation} = m \times \text{Creativity} \quad (\text{Equation 2})$$

"m" is defined as the Transformation Effort to transform the creative imagination into something of value.

The Transformation Effort is defined as the collective organizational effort that is required to transform creative ideas into useful products or services that create value to the inventor, the organization, the community, the consumers, and the country as a whole. Its value is calculated by simply dividing the value of the GII by the GCI.

The Transformation Effort is the effort of the ecosystem in capitalizing its resources to transform creative ideas into wealth creation. Resources include its internal and external stakeholders, internal processes, procedures and systems, and tangible and intangible assets.

Figure 2-3: Relationship between Transformation Effort and Creativity Index

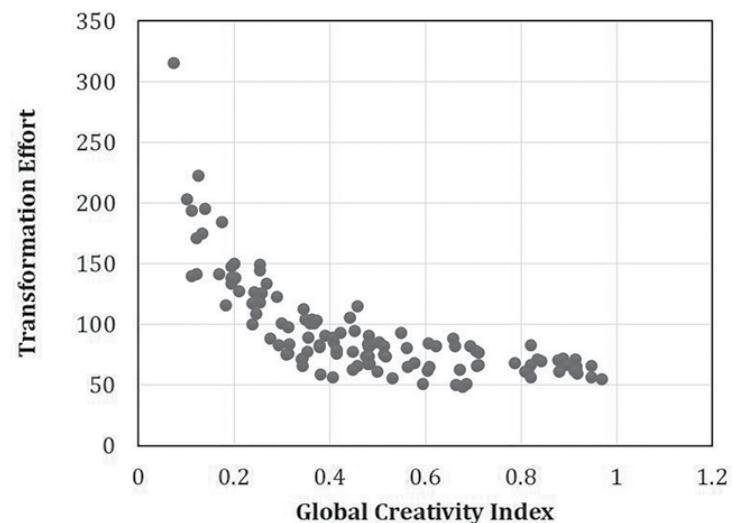


Figure 2-3 shows the downward trend of negative relationship between the Transformation Effort and the level of creativity. Nations with higher levels of creativity tend to have a lower Transformation Effort. A lower Transformation Effort means lesser effort to process ideas into wealth creation due to lower resistance level to affect the transformation process. It also means that the stakeholders are very supportive; internal processes, procedures, and systems are in place; tangible and intangible assets are readily available; and people are free to express their creativity and are generally happier.

On the other hand, a higher Transformation Effort value implies extra effort is required to affect the transformation process; hence people have to work harder to overcome barriers and obstacles. Nations with higher Transformation Effort values should identify the barriers and obstacles that are hindering their population from creating value from their ideas. By identifying these pain points and working diligently to break the current patterns of doing things, their nations' futures are sure to be better off. They could learn the efforts of other nations who have registered higher creativity and innovation levels and the ensuing prosperity of their nations.

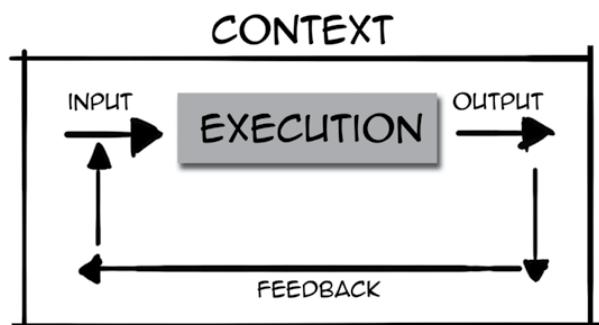
By running through Table 2-1, you would immediately notice the current position of your country in its creativity and innovation levels. If your country belongs in the lower creativity group, it means that your country's Transformation Effort is in the higher range. It is timely for you to advise your country's leadership to adopt the methodology of this book to start breaking the old patterns and replacing them with new patterns to create higher value for you, your fellow citizens, and your country as a whole.

Operationalizing *Break the Pattern* Rules

Being trained as a chemical engineer, I like to use typical process engineering frameworks in ensuring successful planning and implementation of projects. One thing for sure, engineers are trained to design and operate chemical plants that will not explode, or build a building that will not collapse, or manufacture a car that will not stop suddenly on a highway.

As such, employing a framework should provide comfort and guidance to transformation champions that the efforts should yield positive outcomes. The Transformational Value Creation Framework, as shown in Figure 2-4, has five components: Context, input, execution, output, and feedback.⁵

Figure 2-4: The Transformational Value Creation Framework



The ensuing chapters will be detailing each of the elements of the Transformational Value Creation Framework. These chapters are divided into three groups, namely, Part II: Shaping the Context, Part III: Input, Output, and Feedback, and Part IV: Execution.

The context is fulfilling the question of “why” you are doing the transformation initiatives by breaking the earlier patterns in your organization. What are your motives behind this effort? What are the internal or external

forces that push you to move forward? What is the goal that you have set to achieve? By when? What is the real problem that you want to solve? What is the new standard that you want the world to adopt? What are the customer needs that you are trying to address?

Having the right context helps you to see things from different perspectives. It provides the fertile ground for you to connect the seemingly unrelated bytes of information to get the “eureka” moments. There are four major techniques to develop the right context, and each one of them is explained in detail in each chapter in Part II: Shaping the Context.

Chapter 3 looks at the roles of great vision that facilitates great inspirations. Examples of great visionaries such as Henry Ford and Thomas Edison are used to reveal the dynamic linkages between visioning and ideation that resulted in transformational value creation of their chosen industries. However, if you are not as lucky as them, you could still develop the right context by picking up the tools from the next three chapters.

The context could be developed through effective goal setting and linking it with your brain, as outlined in Chapter 4. Goal setting is a skill that could be acquired and enhanced over time through lots of practice. Another technique is to turn threats or pressures, either internally or externally, into opportunities, as described in Chapter 5. Finally, a rule of thumb of spending 10,000 hours on a particular area is proposed for you to develop a new context in your mindset, as explained in Chapter 6.

Part III discusses the input, output, and feedback of the Transformational Value Creation Framework. Essentially, Part III covers the 4Ws (what, when, where, and who) of the whole framework. You need this detailed information for you to properly define the problem. Without these data, your problem-solving effort is going to be based

on a very shallow foundation that leads to yet unsolved problems. Once the problem is properly defined, the next step is to analyze the issues by searching for the root causes. The ideal solution is to eliminate these causes, and that is done through effective idea generation methods.

Two chapters are devoted to answering the 4Ws by capitalizing the minds inside and outside your organization to harvest as much pain points (in Chapter 7), ideas, and insights (in Chapter 8) as possible to solve the problem. In this era of social networking, only an insane CEO will confine idea generation and problem-solving within the four walls of the organization.

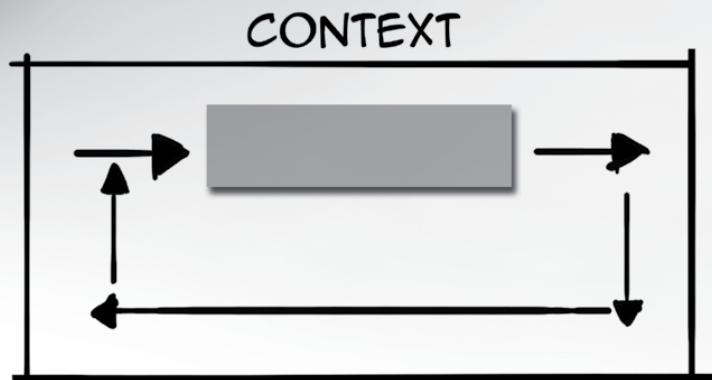
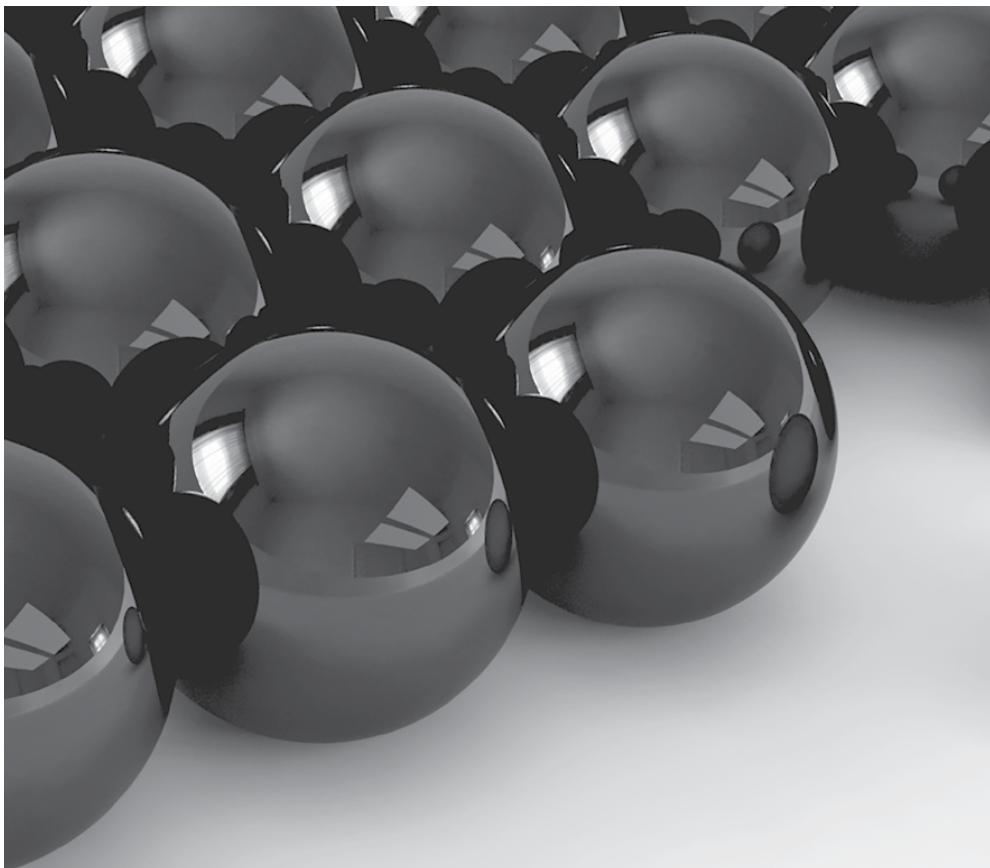
Part IV focuses on the execution process, to answer the “how” question. Since the execution process itself is a huge topic and has been widely written about and analyzed by so many other authors, I am going to focus only on preparing the necessary foundation of execution that every organization must have, as discussed in Chapter 9.

In Chapter 10, I am sharing two interesting case studies that have this foundation of execution being firmly established. These case studies proved that strong foundation significantly reduces the risk of implementation of ideas to achieve the desired goals.

The last chapter is “The Way Forward” and discusses how you can benefit from this book. I am encouraging you to apply the information from this book by putting it into practice and sharing with other readers the transformational value creation outcomes.

Let the journey begin...





PART II

Shaping the Context

Chapter 3:
Why Break the Pattern?

Chapter 4:
The Science of Goal Setting

Chapter 5:
In Search of Eureka!

Chapter 6:
The 10,000-Hour Rule



WHY BREAK THE PATTERN?

Henry Ford was one of the greatest American industrial success stories and was known as the inventor of the mass production system for the automobile. He was part of the First Rich List compiled in 1918 by Forbes.¹ His source of wealth was from his Ford Motor Company in which the new mass production system had grown the output from just over 32,000 cars in 1910 to nearly 735,000 cars in 1916.² That was a massive more than 300% per year increment in productivity!

The new mass production system also helped Ford to reduce the price of Model T from USD825–850 in 1908 to USD345–360 in 1916.² Ford's gross revenue multiplied by more than 10 times in a seven-year period to USD260 million in 1916, with an annual increment close to 130%. This inspiring history of Ford indeed fulfills both indicators for transformation as stated in Chapter 1. The new mass production system involved marked changes in the nature of production of cars, including large production plants; the use of standardized, interchangeable parts; and the world's first moving assembly line for cars.³ The improvement in both productivity and gross revenue was greater than 100%.

The question that you should ask yourself is, “Could I achieve the same feat as Ford?”

Before you answer this question, I give you a hint what Ford said:

“You can take my factories, burn up my buildings, but give me my people and I’ll build the business right back again.”⁴

Ford was so confident that he was able to rebuild his business from scratch again. He must have had the “secret recipe” that allowed him to do just that. This chapter breaks down the science behind Ford’s secret recipe for you and everyone else to follow and get the same result. In fact, if you ask leaders that have produced spectacular results of transformational value creation to their organizations, they would have shared the same secret recipe.

Ford’s secret recipe is the vision that he had for his company, and is as follows:

“I will build a car for the great multitude. It will be large enough for the family, but small enough for the individual to run and care for. It will be constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise. But it will be so low in price that no man making a good salary will be unable to own one...”⁴

Ford’s vision shaped the context that defined the goal of his business, that is, to produce cars affordable to all. He already had this vision even during the period when the automobile was still in the imagination of tinkerers. Scientists were still discussing the possibilities of the internal combustion engine as the locomotive for the “horseless carriage”.⁵

During this period, the horse carriage business was still booming with more than 4,600 carriage companies operating in the United States as late as 1914. From the 1890s to 1920s, although carriages and cars shared the city streets, cars were very expensive and unreliable, and were considered as novelties and not a serious means of transportation.⁵ Even Ford was famous for saying, “If I had asked people what they wanted, they would have said faster horses.”⁴

That vision by Ford also contradicted the vision of Thomas Edison and other automobile manufacturers in the United States. While working for Edison General Electric Company from 1890 as engineer and machinist, he spent his time after working hours in his backyard, developing his “gasoline buggy”.⁵ Edison offered a promotion to Ford to be the general superintendent of Edison General Electric Company, but with condition that he must give up gasoline and devote entirely to electricity. Ford was so convinced of his own vision of the internal combustion engine, and he quit his job at the age of 36, on August 15, 1899.⁵

He managed to convince few backers of his vision to produce cars using the gasoline combustion engine by establishing a company called Detroit Automobile Company (DAC). However, soon Ford was again at odds with his backers. He already envisioned the mass production system, which meant cars could be sold in large quantities at small profits, while his backers preferred the strategy of other automobile manufacturers—that the automobile was a luxury and should be produced in small quantities at a huge profit per unit.⁵ So he quit DAC and formed another company called Ford Motor Company in 1903.³

To achieve that vision of mass-producing the cars, Ford had to find ways to reduce the cost of manufacturing the cars. He found the inspiration of the assembly line when he visited the Armour and Swift meat packing

plant in Chicago that was owned by his close friend, Mr. Philip D. Armour.² He saw a marked difference in the “disassembly” line of the animal carcass and the assembly line of his car and noticed a much higher productivity of the former. Mr. Ford reorganized the operation of his plant from a single workman who constructed a certain car part from start to finish to several workmen working on every car. Each worker performed a single specialized operation to produce the same part.⁵

If it were you who had visited the meat packing plants, would you see the same thing as what Ford saw? The answer is a big no. Depending on your context, you will see things differently from Ford.

Ford had the vision of producing the most affordable car for the public. That vision shaped his context in his subconscious mind. That context filtered what Ford saw in things around him. In this case, it was his subconscious mind that connected the two unrelated dots—his current assembly line that was low in productivity and the disassembly line of animal carcasses in the meat packing plant that was higher in productivity. In short, Ford’s context prepared him to perceive things in the right way, that is, conceiving the creative inspiration that led to the creation of the mass production system for the automobile.

To understand what “context” is, let us look at a cup that you normally use to drink your coffee. You buy the cup with an intention to serve you a certain purpose—to drink your coffee. You wash and prepare the cup for it to be ready to receive its content, which will be poured by yourself or somebody else, anytime and anywhere, and of course the content is to fulfill your need. If you do not have the cup or if the cup is not ready, you will never get its content whenever there is an offer of coffee around.

Analogously, the physical cup is the context that you need to define in trying to solve your problem. The context is shaped by the great vision that you have in solving your problem. Once the context is firmly established,

you are now ready to receive the right contents by filtering the right bytes of information from the surroundings. The “eureka” moment happens when these unrelated bytes of information are brilliantly connected by your subconscious mind to your original great vision.

To recap, the great vision of Ford shaped the context in his subconscious mind. This context helped him to discover features in the disassembly line of the meat carcass that could solve the low productivity of his own automobile plant. It was his context that provided the catalyst to unlock the psychological inertia that locked Ford’s conscious mind.

The same pattern of inspirational stories that led to transformational value creation repeats itself in pages of history. Let me share with you similar stories of Thomas Edison and Dr. Frank Gunsaulus.



Of course, Thomas Edison was the founder of Edison General Electric Company, the company that employed Ford. Edison was a prolific inventor with a record of 1,093 patents under his name. At the time, Edison was so focused on solving a challenge that scientists had been grappling since early of 1800s: To replace the gaslight with an inexpensive electric light.⁶

The idea of electric light to replace the gaslight was not new. A number of scientists had developed other forms of electric lighting such as the carbon arc lamp and, of course, the incandescent lamp.⁷ However, nothing had been developed that was practical for home use.

In 1879, he made a breakthrough with a bulb that used carbonized bamboo as the cheapest source for filament that led to long-lasting, reliable, and affordable light bulbs. Edison's next greatest achievement was developing an electrical lighting system that comprised all the necessary elements to make incandescent light practical, safe, and affordable.⁸

In December 1879, Edison successfully demonstrated the first incandescent lighting system at the Menlo Park laboratory complex.⁸ The first commercial power station, unveiled in September 1882 on Pearl Street in Lower Manhattan, marked the beginning of the electrical age.

To crystallize his tireless effort for the last decade and to mark the beginning of the electrical age, Edison incorporated the Edison General Electric in 1889. The company then merged with other electrical companies in 1892 and became simply General Electric.⁸

Similar to Ford, the vision of Edison to electrify the world with affordable electricity had shaped his context of thinking and seeing things around him. That vision had caused him to be very focused on what needed to be done. On this, he said, "The first requisite for success is to develop the ability to focus and apply your mental and physical energies to the problem at hand—without growing weary."

To fulfill his vision, Edison was looking for the right material for an affordable filament of the incandescent bulb. It was reported that Edison had "failed" 10,000 times before he perfected the incandescent bulb.⁹ On this failure, he said, "I haven't failed. I've just found 10,000 ways that won't work."

That vision and the execution of it through thousands of experiments had actually prepared his subconscious mind to "connect the dots".

As the story goes, Edison got the inspiration of the perfect filament while fanning himself with a fold-out oriental bamboo fan on a hot summer day. He saw a fine straw of bamboo on the oriental fan and immediately carbonized it and tested it as a filament.¹⁰ The carbonized bamboo proved to be the key to a long-lasting and affordable light bulb.⁸

Certainly, it was his context that made Edison "see" the fine straw of bamboo as the solution to his quest for affordable filament. His ever-prepared subconscious mind had successfully "connected the dots" to solve the biggest challenge of the century. This "aha" moment in the history of electricity was permanently immortalized by the incandescent light bulb becoming the symbol of creativity and innovation.

The third story that I would like to share is an interesting story about Dr. Frank Gunsaulus.^{9,11} While going through college, Frank Gunsaulus observed many shortcomings in the educational system. He believed the defects could be easily corrected if he could establish a new college where students of all backgrounds could prepare for meaningful roles in a changing industrial society. However, he would need about USD1 million in that year of 1890 (about USD30 million in 2017) to make the project a reality.

Being a preacher with no money, he could only afford to think and plan the ambitious project over and over again until he became obsessed with it. The biggest challenge was how to raise that elusive USD1 million.

Then one day, he realized that he had been thinking about it without doing anything for the last two years. It dawned on him that he could not just continue thinking indefinitely. He had to set a time limit.

As narrated by Dr. Gunsaulus to Napoleon Hill, the moment he reached a definite decision to get the money within a specified time, “A strange feeling of assurance came over me... Something inside me seemed to say, ‘Why didn’t you reach that decision a long time ago? The money was waiting for you all the time!’ Things began to happen in a hurry. I called the newspapers and announced I would preach a sermon the following morning, entitled, ‘What I Would Do If I Had a Million Dollars.’”¹²

After the sermon, a man arose from his seat and came forward, extended his hand, and said to Dr. Gunsaulus, “Sir, I like your sermon. I believe you can do everything you said you would, if you had a million dollars. To prove that I believe in you and your sermon, if you will come to my office tomorrow morning, I will give you the million dollars. My name is Philip D. Armour.”^{11,13}

The one million dollars was used to establish the Armour Institute in 1893, offering professional courses in engineering, chemistry, architecture, and library science. In 1940, the Armour Institute merged with other colleges and formed the Illinois Institute of Technology (Illinois Tech) in Chicago.¹¹

Mr. Philip D. Armour was a successful industrialist in Chicago. One of his many companies was the Armour Meat Packing Factory that was visited by Henry Ford. If you may recall, that plant became the source of inspiration to Henry Ford on the mass production system that revolutionized not only automotive industry, but the manufacturing industry as a whole.

I hope you could notice that similar pattern of things had happen to all three cases above. It always starts with great visions that shape the context of the great minds. Their contexts were firmed up with the obsession of their visions. Their contexts made their subconscious minds “connect the dots” and provide contents of creative solutions to their biggest problems.

I am very much indebted to Dr. Gunsaulus and Mr. Armour. I had the opportunity to study chemical engineering at the Bachelor and Master levels in the Armour College of Engineering, Illinois Tech from 1981–1986. I became a testimony of the success of the vision of Dr. Gunsaulus through his famous sermon on “What I Would Do If I Had a Million Dollars”.

I also benefited from the generosity of Mr. Armour who provided the one million dollars to Dr. Gunsaulus to establish the Armour Institute that later became the Illinois Tech. Through Illinois Tech, I got connected to Henry Ford who had visited the Armour Meat Packing Factory that became the source of inspiration for the mass production system. Through Henry Ford who used to work briefly in Edison General Electric Company, I got connected to the great inventor Thomas Edison as well.

I became the living testimony who received great benefits from these three great gentlemen who had fully capitalized their great minds through their great visions that had transformed not only their respected industries, but also created transformational value creation to the whole world.

The above three examples of great visionaries demonstrated that the technique discussed in this chapter is a universally proven method—that is, vision that shapes the context in the subconscious mind. If you are not as visionary as them, you could still learn to develop your context by using other techniques to be discussed in the subsequent three chapters.