

“Innovation DNA” – what are you good at ?

Dr. Ali Alwattari, Innovation Practitioner and Author

Introduction

The principle guiding this article is that if you put innovation in the context of a learnable human practice similar to engineering, law, or medicine, it becomes possible to gain new insights about why some companies are more successful at innovation than others. Benchmarking studies try to figure this out but fall short of explaining how companies differ from each other at the human level during the innovation process. Therefore, I have come up with another approach – the concept of “Innovation DNA”. I developed this concept by analyzing the innovation cultures of Gillette and P&G after working in both companies in Research and Development and New Product Development.

What is Innovation DNA ?

Innovation DNA integrates the human aspects of innovation with the technical tasks of innovation to get a more whole representation of innovation reality. It can be defined by two components:

1. First, Innovation DNA comprises the innovation habits and practices that get passed on from one generation to the next – analogous to biological DNA. These then become associated with better outcomes from innovation effort.
2. Second, Innovation DNA comprises the choices and actions of an organization and its culture relative to perpetuating and encouraging these practices be they among scientists in the lab, the time and effort spent on innovation, or the managerial support of innovation. Thus, an organization continually “selects” and “transmits” certain innovation DNA for continuity and passage on to the next generation while de-emphasizing other innovation DNA.

Why is Innovation DNA important ?

In its simplest form, innovation is something that happens when creative people try to convert new ideas into reality and solve the problems that come up along the way. To reliably and sustainably do this, however, it is important understand what things you are good at, what things you are not good at, and how these factors affect your performance – namely, your

Innovation DNA. So, before you embark on ambitious new projects and challenges, you need to figure out your Innovation DNA and what you might need help with. To illustrate, let's do an analysis of two merging innovation cultures, namely P&G and Gillette, normalized by comparing similar sized R&D departments working in analogous business units/product categories (Personal Care).

Innovation DNA analysis

Since Innovation DNA is a relatively new concept, it is important to explain the reasoning of the methodology, and to build a framework, semantics, and language to enable diverse organizations to be able to think about it, analyze themselves, and come up with practical and actionable insights. In developing this analysis comparing innovation at Gillette and P&G, a number of sources of data and information were used. These included: (1) retrospective analysis of source Innovation DNA at start of companies; (2) analysis of actual work experience of developing ideas and products in comparable departments within each company; and (3) discussions with scientists and managers at both companies. This data and information were then used to answer the following questions and thereby construct a picture of the Innovation DNA the companies.

What are the origins and characteristics of the Innovation DNA?

The origins of Innovation DNA can be traced back to factors contributing to the original startup and success of the companies since these are the “organic” linkages that intellectually and practically shaped the innovation cultures. The table below compares key factors contributing to the “source DNA” that existed at the point of startup of P&G and Gillette because this is an essential and lasting component of Innovation DNA:

Factor	P&G	Gillette
Founder	- Soap/Candle Making	- Inventor & Entrepreneur
Specialization	Experts - Entrepreneurs	- Dad was patent agent
Initial Product	Quality, consumer preferred	Safe, affordable,
Goals	soap	disposable blades

Consumer Role	Consumer is boss – fundamental starting point	Consumer important but market and ideas often come first
Competitive Climate	Many competitors	Few competitors
Initial innovation focus	- New products developed for different needs - Differentiated via performance, purity	- New product that changed how consumer performed task - Differentiated by novelty
Intellectual Property Focus	Formulas, Trademarks, Eventually Patents	Patents, Trademark

Source: the author

What are the deliverables or valued outputs of innovation?

Different “outputs” are considered “deliverables” in different corporate cultures. Identifying these is extremely important in order to track the impact of innovation on results. If you look hard enough, most companies or organizations have a critical “currency” of innovation that demonstrates whether an idea has achieved the credibility necessary for “technology transfer” out of the lab and to the consumer—beyond the project cost and the market share. Some key examples that come up repeatedly and that differentiate successful versus unsuccessful projects include prototypes, consumer and technical performance data relative to benchmark products, patents, and clear technical communication that illustrates the benefits of a new product. In the case of P&G and Gillette, these kinds of deliverables are used in both cultures but have different relative weightings. For example, working product prototypes that are feasible to make are equally used and valued as is the use of technical and consumer data to differentiate and demonstrate the improvement in the new product or idea versus existing products. Meanwhile, there can be different emphasis in the area of patents, a place where one company has a greater emphasis on trade know-how that is kept confidential versus describing new products and technologies in published patents. Also, in technical communication,

the frequency and quantity of communication tended to be greater at P&G than it was at Gillette.

What happens to ideas and what are their sources?

What gets done with ideas is very important to the quality of life of an innovator working at a company. Innovators have a strong emotional attachment to their brainchildren and a unique commitment to solving the many challenges that pop up during development. You can see this strong attachment at both P&G and Gillette. Both companies encourage, enjoy, and value creativity and ideas. In that respect they are very similar. For P&G, ideas come from consumer research as well as from development teams doing internal technology application and also from identifying external innovations. At Gillette ideas often come from the development team or marketplace pull, with some grounding in consumer drivers. At Gillette, ideas tend to have their own life cycles and the energy is about the idea, with creative factors such as concepts being considered very real in the culture. Ideas “live” in specific domains, are overtly incubated from idea to reality, and are thought of as such in people’s minds and in day-to-day practice. At P&G, ideas also pass through different stages but have the added dimension of being more specific, functionally organized, and context dependent. Thus, although the product development stage gates of concept, feasibility and development are common across many organizations in principle, the relative weighting and focus on each stage differs noticeably between companies.

What tasks do innovation workers spend their time on?

In terms of the work process and daily tasks of technical people, companies have very different “depth/breadth” ratios and “project ownership/sharing” ratios. This may seem subtle but these differences really make a big difference in day-to-day life. If you are an all-rounder and know just enough to get lots of things done on your project, it translates culturally into “independence and ownership” DNA; whereas if you are a specialist, it translates culturally into “consultation, thought leadership, and deep penetration of knowledge in one area” DNA. Probing this a bit further, we observe several distinctions. At Gillette, one individual can be “good” at four to five tasks in a project and take on proportionately greater amount of responsibility for results; whereas more typically at P&G, there is functional excellence in one to two core competencies, with the team sharing the responsibility for the rest of the work and the outcomes or results. Thus, at P&G “ownership” is somewhat displaced by “teaming” and

“technical leadership” where needed. Of course, neither company is totally one style but is usually a mix depending on the manager and the personalities of the innovators involved.

More than Innovation DNA is ultimately needed to increase success

While creativity and novelty often come from companies with strong Innovation DNA, the DNA does not always guarantee great deliverables and outcomes because the development and execution of ideas also depends on applied skills such as people skills across different functions, prototyping, measurement methods, and scientific understanding as well as the core idea and concept. Therefore, it is only a fully balanced portfolio of innovation practices cultivated in the Innovation DNA that can lead to an overall increase in a project’s probability of success.

Conclusions

The principle and practical use of Innovation DNA is intended to help real people understand each other’s approaches better and to collectively focus on the most constructive activities. Innovation DNA and its analysis are thus not only important for mergers, but also for joint development between product companies and their suppliers, between different departments of one company, between a company or entity and its employees, and above all between individuals have to work together on problems, ideas, or projects. Thus choices have to be objectively and subjectively made on “how diverse & integrated” the collective “innovation DNA” is, driven by the willingness of innovators and managers to prioritize success over tradition.

Dr. Ali Alwattari is currently a Principal Scientist in R&D at P&G. He has 15 years of innovation track record (new products, technologies, and patents) and real life experience in both R&D and Product Development, and has worked in both Fortune 500 and startup corporations.

Emails: alwattari.a@pg.com, alwattari@alum.mit.edu

Ubiquity Volume 8, Issue 17 (May 1, 2007 - May 7, 2007)