



## SUCCESSFUL INTELLIGENCE AND ENTREPRENEURSHIP

Shabnam

Assistant Professor, Department of Humanities and Social Sciences,  
National Institute of Technology (NIT), Kurukshetra (Haryana)

### Abstract

Successful entrepreneurship requires a balance among analytical, creative, and practical aspects of intelligence, which, in combination, constitute successful intelligence. Entrepreneurship is outcome of interaction between individual and environment. This theoretical paper is an attempt to find the relation of these different components (analytical, creative, and practical) of successful intelligence to entrepreneurship. Along with the descriptions of analytical, practical and creative intelligence, this paper also describes how all three components merge in successful intelligence. The present paper reviews how successful intelligence can produce different kinds of new contributions. It concludes that successful intelligence is desirable for entrepreneurial success.

**Key words:** Successful intelligence, entrepreneurship.

### Introduction

IQ-based tests, like practical-intelligence tests, predict job success (Sternberg, 2004). Both kinds of tests seem to measure intellectual skills necessary for job success, including entrepreneurial success. IQ-based skills are important to analyze situations correctly. Practical skills are necessary to apply these analytical tools correctly to the problems really facing one on the job. Some people are effective in practical settings but not in abstract analytical settings, and others are effective in abstract analytical settings but not in practical settings. To be effective on the job, however, requires a third kind of skill beyond the analytical (IQ based) and the practical. This third kind of skill is creative intelligence (Sternberg, 2004).

Creative intelligence is used to generate ideas that are novel, high in quality, and appropriate to the task one faces. Creative intelligence is needed in order to think flexibly (Sternberg, 2004). A number of measures of creative intelligence also have been devised (Sternberg, 2004). For example, test takers might be asked to write short stories, tell a story orally, draw works of arts, produce advertisements, solve novel scientific problems, design a logo using computer software, or caption a cartoon (Sternberg, 2004). The most important kind of intelligence for an entrepreneur, or really anyone else, is successful intelligence, which involves a balance of analytical (IQ-based), creative, and practical intelligence (Sternberg, 1997). One needs the creative intelligence to come up with new ideas, the analytical intelligence to evaluate whether the ideas are good ones, and the practical intelligence to figure out a way to sell these ideas to people who may not want to hear about them. Not one of these three kinds of intelligence is adequate in itself. People who are high in analytical intelligence but not the other kinds often are good memorizers and analyzers, but they need other people's ideas to remember and analyze (Sternberg, 2004). They make poor entrepreneurs, because entrepreneurs simply must be idea generators to succeed. Moreover, they must be creatively flexible. People who are high in analytical intelligence but none of the other two kinds often function best when they are backroom numbers crunchers, insulated from the real-world concerns for which their numbers will be used. People who are high in creative intelligence but not in the other kinds may be good at coming up with ideas but often are not good either at knowing whether their ideas are good ones (analytical intelligence) or at selling their ideas to others (practical intelligence). In addition, people who are high in practical intelligence but not in analytical or creative intelligence may be effective salespeople, but they will sell anything. They do not come up with their own ideas for what to sell and are unable to analyze whether what they are selling is of any value. They may end up on used-car lots, selling whatever comes in.

Successful intelligence is applied in order to balance adapting to, selecting, and shaping environments (Sternberg, 2004). When one adapts to the environment, one changes oneself in order to fit into the environment. Management jobs, in particular, involve adapting to the environment. Indeed, the tests of practical intelligence the measure (mentioned above) adaptive skills: to what extent can one learn what one needs to know in order to fit into an environment? When one selects an environment, one decides that adaptation is not worth it. One decides to find another environment in which one's skills better apply. For example, a manager may decide that his or her skills or values do not fit the environment in which he or she works and find a new job. The third option is shaping, however. This is the option in which entrepreneurs must specialize. They need to try to change the ways others think in order to fit their own view of the way reality should be. They are not only responsive to existing markets but also create markets. The obvious example is the software industry, where people finding themselves doing all kinds of things that just a few years ago they had no desire to do because they were not even aware of the possibility they could do these things (for example, e-mail).

When entrepreneurs and others shape the environment, they are basically applying successful intelligence to idea generating. The ideas they generate can be of a variety of kinds. **Applying successful intelligence to idea generation**

Successfully intelligent people need to recognize that all ideas are not equal; moreover, those ideas for products and services can be of different kinds. Entrepreneurs looking to succeed need to be aware of their options in terms of the kinds of ideas they may generate and evaluate. It is proposed that there are eight basic kinds of new ideas, entrepreneurial or otherwise (Sternberg, 1999):

1. Conceptual replications: these products or services basically repeat what is already out there with minor variations. They are unlikely to lead to any great entrepreneurial success unless they are marketed very cleverly. The

reason, of course, is that they offer little that is new. Examples are numerous. For example, some automobile companies have different names for the same product line. They will introduce essentially the same car in each of the two product lines, with different names and very slightly different features. Often, one product line will be more expensive than the other, but the differences are strictly cosmetic (Sternberg, 2004).

2. Redefinitions: redefinitions are essentially existing products or services that are now seen in a new light. For example, four-wheel drive off-road utility vehicles are nothing new. What is relatively new, however, is the purchase of these cars as status symbols by people who have no intention (or skills) ever to use them off road. Thus, the same vehicle is seen in a new redefined light (Sternberg, 2004).

3. Forward incrementation: a forward incrementation is a usually fairly small movement forward in product or service lines. The product or service is different from the previous one, but only incrementally. An example is this year's version of last year's car. Except for years in which there are major redesigns, the new car is the last year's car with only slight improvements (Sternberg, 2004).

4. Advance forward incrementation: this kind of development occurs when a new product or service represents a leapfrogging from the last one. It moves far ahead, often so far that people cannot yet see the use of it. Some steps have been skipped, and often people are not ready for the new product or service. For example, many of Leonardo da Vinci's inventions were so far ahead of their time that they were looked at as fantasies for many years after Leonardo proposed them (Sternberg, 2004).

5. Redirection: in a redirection, a new product or service takes off from where the last one was but takes off in a totally new direction. It introduces some kind of qualitative as well as quantitative change in the product or service. For example, the first binary computers represented a redirection. They took off from existing computing devices, but the binary basis they used as a basis for computation enabled them to become much more powerful than the older calculators they replaced. Thus, they were not simply more advanced calculators because they operated on a fundamentally different principle (Sternberg, 2004).

6. Regression and redirection: a regression and redirection appears when a product or service makes an appeal to "old times." The idea is to have the benefits of old times without the costs. For examples, reissues of first edition books can provide the same feel, the same cover artwork, the same size of page, but with modern acid-free paper that does not crumble. These reissues, of course, have durability at the expense of having no value to collectors. Mechanically wound watches represent another regression and redirection (Sternberg, 2004).

7. Reinitiation: reinitiation occurs when a new product or service jumps away from old ones and not only takes products and services in a new direction but also starts at a distance from the old products or services. Electric washers, for example, are more than a redirection. They are based on a fundamentally different principle of washing than are washboards (whereas electric dryers, like clotheslines, work by simple air-drying). The first airplanes as well as the first space satellites were reinitiations, representing distinct breaks from the past. In addition, of course, when fire was first used to cook foods, it most certainly was reinitiation, one that has lasted until the present day (Sternberg, 2004).

8. Integration: integration represents the merging of two or more existing ideas into a unified one. Such products and services represent amalgams of things that are already out there but sold separately. Examples are seaplanes, office suite software (which combines separate office functions into one software package), E-books (which combine the functions of print books with those of reading material on a screen), and handheld organizers, which combine the functions of the paper calendars and schedulers of old with those of modern computing devices (Sternberg, 2004).

In sum, successful entrepreneurship requires one to not only to come up with product and service ideas but also to know what kind of product or service one has. The product or service is more likely to be marketed successfully if the marketing takes into account the kind of new idea it represents (Sternberg, 2004).

The different kinds of products need to be promoted and otherwise marketed in somewhat different ways. The biggest issue is whether the product represents a quantitative or a qualitative shift from already existing products. Consider each in turn. Products (or the ideas underlying them) that represent quantitative shifts are easier to sell, because the market already exists and people are familiar with the kind of product that is being sold. For example, conceptual replications are close to identical to existing products. Typically, the need for the product already is recognized, but so is the brand name of what often is a competitor. Because the product may be essentially the same as another, image may be the main basis for promotion (for example, emphasizing status of the user or cost comparisons that put the new product in a more favorable light). Redefinitions are best marketed by first pointing out the trust that already has been built up in the product and then pointing to its new use. For example, consumers already valued aspirin for one purpose (usually combating pain) and needed only to view the product in a fundamentally different way-as a way to prevent heart attacks.

Forward incrementations can be marketed as having newer and better features, as being faster in getting done whatever they need to get done, or as being simpler to use. Products (or the ideas underlying them) that represent qualitative shifts may, in general, be harder to market, because potential customers typically are aware neither of the particular product nor, often, even of what its potential use will be. A major barrier is convincing people that the new product really will function effectively. Any number of new products fails because they seem better in theory than in practice. Often, the products that represent redirections or reinitiations have no existing market. When electric razors were first introduced, for example, there was a large potential market but no existing market. The market grew more slowly than it might have had electric razors given a shave comparable to that of hand razors. Until recently, they did not, and some would argue that they still do not. Electric cars have failed so far, largely because their engines do not retain charge long enough to make them practical. They are likely to continue to fail until their engines retain charge longer and also until it is shown that saving one source of energy (petroleum) is more practical economically and otherwise than is saving another form of energy (electricity) (Sternberg, 2004).

Successful entrepreneurs appear to be higher in social competence than are unsuccessful ones. In particular, four factors seem to underlie this social competence: social perception (which involves accuracy in perceiving others), impression management (which involves techniques for inducing positive reactions in others), persuasiveness (which involves the ability to change others' views or behavior in desired directions), and social adaptability (which involves

feeling comfortable in a wide range of situations). These variables, especially social perception, seem to be a key to entrepreneurial success. Baron and his associates (Baron, 2000a, b; 1998, Baron and Markman, 2000) have been interested in the intellectual (as well as other) attributes that distinguish entrepreneurs from non entrepreneurs and more successful entrepreneurs from less successful ones. Baron's research suggests that entrepreneurs also engage in cognitive processing that is of questionable merit. They are less likely to think counterfactually and therefore may fail to foresee unexpected consequences of their actions. They are also susceptible to certain heuristics and biases in thinking, such as believing that evidence from a small number of cases that, on their face, seem representative, can be applied to a large number of cases. Clearly, more is involved in entrepreneurial success than just the academic side of intelligence. Might there be a general rubric under which this "something more" can be understood?

Findings such as these suggest that there is some kind of construct of practical intelligence that is distinct from the kind of academic intelligence measured by conventional tests. Sometimes, there is actually a negative relation between academic and practical intelligence (Sternberg, 2004). The higher the children's scores on the tests of practical intelligence, the lower were their scores on the tests of academic intelligence and school achievement (Sternberg, 2004). In other words, the children best able to cope with the natural environment were faring the worst in academic tasks. Why? It comes as a surprise to many school people, although not to most entrepreneurs, that many children do not see much of a connection between success in school and school-related tasks on the one hand and success in life on the other hand. People who wish to be entrepreneurs and form their own business may find school a distraction from what interests and matters most to them. People whose goals are nonacademic—such as those who want to become concert musicians, athletes, actors, plumbers, carpenters, farmers, miners, and so forth—also may find school to be largely unrelated to their goals. The result can be a negative correlation between academic and practical success (Sternberg, 2004).

Of course, people who are high in practical intelligence may also be high in academic intelligence (Sternberg, 2004). The two are not necessarily negatively related. Typically, there is not any significant correlation at all, assuming some kind of threshold level of IQ (usually around an IQ of about 120). In other words, at the lowest levels of IQ, there will be a correlation between IQ and almost anything, including the rate at which one can tie shoelaces.

A number of tests are devised to measure practical intelligence. These tests are of different kinds. Several of the tests measure tacit knowledge. Basically, tacit knowledge is what one needs to know in order to negotiate an environment effectively that typically is not directly taught and that often is not even verbalized. In other words, tacit knowledge is the knowledge that often is most important for success in the workplace, but it is the knowledge that people must pick up on their own. Often, tacit knowledge is purposefully hidden. For example, in a business, the management may not want employees to know the real bases that are used for deciding on promotions and raises and so may disseminate information about such things that is not useful or that even is false (Sternberg et al., 2000; Wagner, 2000). Some entrepreneurs leave conventional business settings because they are not interested in playing the game of figuring out what the tacit knowledge of the organizational environment is. They would rather play by their own rules than teach other people (Sternberg, 2004).

How can one discover the tacit knowledge people use if the knowledge tends to be hidden? Even worse, people often are not aware of their own tacit knowledge. Successful people interviewed in the field of interest (for example, sales, business management, and military leadership) and ask them to relate critical incidents they have encountered in their line of work. Then they were asked to characterize how they solved the problem and how the way they solved the problem separated them from less successful people in their line of work. Here are some examples of test questions (Sternberg, 2004); some of them drawing on tacit knowledge while others do not:

1. Practical everyday inference: this test presents individuals with everyday problems of the kinds they encounter in their lives outside of school. They are asked which of four solutions the best one is (Sternberg, 2004).

2. Practical mathematics: individuals are presented with practical mathematics problems, such as computing the amounts of ingredients needed for a recipe or the cost of tickets to an athletic event. The individuals have to solve the problems, for example, computing how many the tickets to the athletic event will cost (Sternberg, 2004).

3. Route planning: individuals are presented with maps and questions about using the maps to negotiate routes to get from one place to another. The individuals have to solve the problems (Sternberg, 2004).

4. Movies: individuals are presented with brief fragments of movies showing people their age confronting everyday problems, such as deciding how to allocate rent payments among roommates with bedrooms of different sizes or deciding what to do upon arriving at a party where one does not know anyone. After watching the movie fragments, the individuals have to indicate what they would do were they in the situations described in the movies (Sternberg, 2004).

5. Tacit knowledge for school: test-takers are presented with situations typical of those encountered in schools. For example, they may have to study for a test or they may have to do a term paper. Various suggestions are given as to the quality of different ways of handling these situations. Test-takers rate the quality of each of the options (Sternberg, 2004).

6. Tacit knowledge for the workplace: test-takers are presented with situations typical of those encountered in low-level jobs in workplaces. For example, they may be having a conflict with another employee with whom they have to work or they may wish to ask their boss for a raise. Various suggestions are given as to the quality of different ways of handling these situations. Test-takers rate the quality of each of the options (Sternberg, 2004).

7. Tacit knowledge for managers: test-takers are presented with situations typical of those encountered in managerial jobs, ranging from lower level to upper level management. For example, they may be deciding to which of several companies to award a contract or they may be devising a strategy to counteract a competitor. Various suggestions are given as to the quality of different ways of handling these situations. Test-takers rate the quality of each of the options (Sternberg, 2004).

8. Tacit knowledge for sales: test-takers are presented with situations typical of those encountered in sales. For example, they may be trying to figure out how to sell a copy machine that has been moving slowly off the showroom floors or they may be trying to sell advertising space through telemarketing. Various suggestions are given as to the quality of different ways of handling these situations. Test-takers rate the quality of each of the options. There is also a performance form of this test, where the test taker has to make a sale by telephone to an alleged potential customer

(actually, the tester). The potential customer raises various objections and the test-taker has to respond to them (Sternberg, 2004).

In the research on practical intelligence, certain findings (Sternberg, 2004) have emerged again and again across studies and study populations:

1. Modifiability of practical intelligence. Practical intelligence can be developed. Indeed, it must be developed. People are not born with the kinds of common sense they show in their everyday lives. Practical intelligence is best taught not through direct instruction but through the case study method, where learners are put into the situations they need to confront (Sternberg, 2004).

2. What matters for growth of practical intelligence is not experience but rather learning from experience. Sometimes, people tend to think that experience is the best teacher (Sternberg, 2004). This old maxim is only partly true. Experience is the best teacher, but only if one learns from the experience. Some people can be in a job for years and know less than someone who has been in the job for months. What matters is not the amount of experience one has but how much one has learned from that experience. Tacit knowledge sometimes can be taught through guided experiences, however, and courses in entrepreneurship try to do just that, at least to some extent. A program was devised for teaching practical intelligence in school (Williams et al., 1996).

3. Trivial correlations with IQ-based measures. Tests of practical intelligence typically show modest or trivial correlations with tests of academic intelligence, within the range of people who actually compete for jobs. (In other words, these statistics exclude people of very low IQs.) As noted above, sometimes, the correlation even is negative (Sternberg, 2004). The main message, though, is that IQ or scores on IQ-based tests such as the SAT, GRE, GMAT, and so forth are not good predictors of practical-intellectual skills. The tests presumably would correlate with measures of social-intellectual competencies, although, to date, we have not actually investigated such correlations.

4. Trivial correlations with measures of personality and cognitive styles as well. Tests of practical intelligence also do not correlate with measures of personal attributes. In other words, practical intelligence is a distinct entity (Sternberg, 2004).

5. Significant correlations with job-related criteria. Measures of practical intelligence predict job success about as well as or better than do IQ-based tests. The kinds of criteria we use vary across occupations. For example, for business executives, criteria such as performance ratings given by superiors, merit salary increases, level of responsibility in one's firm, and so forth was used. For sales people, we use criteria such as commission income, numbers of units sold, sales awards, and so forth. Note that IQ-based tests also have some predictive value (Sternberg, 2004). Hence, the two kinds of tests are complementary. They measure different kinds of skills needed for success. Because the tests are devised on a contract basis and because no contracts for measures related to entrepreneurship, have not yet devised tests for entrepreneurs. The principles of devising such tests, however, would be the same as for the various jobs for which tests was devised. In particular, one starts by interviewing successful people in a given job and asking them for how they performed in the critical incidents that distinguish those who are highly successful in a field from those who are not.

In entrepreneurship, it is in some ways more difficult to set criteria against which to validate tests than it is in other areas of work. The standard measures would be things like return on investment, rate of growth, top-line and bottom-line income, reputation in the field, and so forth (Sternberg, 2004). However, in all jobs and particularly in entrepreneurship, individuals sometimes purposely limit their endeavors in order to have a life beyond work. Thus, any of these criteria can provide only an incomplete assessment of success. Tests of practical intelligence are useful predictors of job-related skills, independently of IQ-based tests (Sternberg, 2004).

In sum, successful entrepreneurship is not really just a story about intelligence in the traditional sense but more fully a story about successful intelligence—the strategic merger of analytical, creative, and practical intelligence. All three kinds of intelligence can be developed and are developed through good use of experience. Successful intelligence as a whole, much more so than its components in isolation, is what is truly responsible, from the standpoint of intelligence, for entrepreneurial success.

## References

- Baron, R.A. (1998). Cognitive mechanisms in entrepreneurship: why and when entrepreneurs think differently than other people. *Journal of Business Venturing* 13, 275–294.
- Baron, R.A. (2000a). Counterfactual thinking and venture formation: the potential effects of thinking about “what might have been”. *Journal of Business Venturing* 15, 79–92.
- Baron, R.A. (2000b). Psychological perspectives on entrepreneurship: cognitive and social factors in entrepreneurs' success. *Current Direction in Psychological Science* 9, 15–18.
- Baron, R.A., & Markman, G.D. (2000). Beyond social capital: the role of entrepreneurs' social competence in their financial success. *Academy of Management Executive* 14 (1), 106–116.
- Sternberg, R.J. (1997). *Successful Intelligence*. Plume, New York.
- Sternberg, R.J. (1999). A propulsion model of types of creative contributions. *Review of General Psychology* 3(2), 83–100.
- Sternberg, R.J. (2004). Successful intelligence as a basis for entrepreneurship. *Journal of Business Venturing* 19, 189–201.
- Sternberg, R.J., Forsythe, G.B., Hedlund, J., Wagner, R.K., Williams, W.M., Snook, S.A., & Grigorenko, E.L. (2000). *Practical Intelligence in Everyday Life*. Cambridge University Press, New York.
- Wagner, R.K. (2000). Practical intelligence. In: Sternberg, R.J. (Ed.), *Handbook of Human Intelligence*. Cambridge University Press, New York, 380-395.
- Williams, W.M., Blythe, T., White, N., Li, J., Sternberg, R.J., & Gardner, H. (1996). *Practical Intelligence for School: A Handbook for Teachers of Grades 5–8*. HarperCollins, New York.