Attention Management : Leveraging The Value of Information in the New Economy

Kanika Chatterjee
Reader, Department of Commerce,
University of Calcutta

Abstract

The present paper dwells upon one of the most pressing problem for business leaders in the new economy of cyberspace-the inadequacy of human attention that must be allocated to the overload of information that is created and made accessible to us. Attention is at a premium partly because information has become less expensive now. In an "info-glut" environment, there is little time for introspection or contemplation. Attention and not information is the scarce resource in today's economy, and so it must be managed. Attention managers encounter challenges on both sides of the attention equation: (1) how to get and hold the attention of various stakeholders, and (2) how to parcel out attention to each stakeholder in the face of innumerable options. In defence of the need to manage attention for effective use of information, the paper addresses the contemporary problem of attention deficit disorder (ADD), delineates the concept of attention and presents a workable typology of attention. Further, it discusses the basic principles underlying an attention economy, draws the scope of attention management and identifies effective ways of operationalising it. In order to attach practical significance to the concept of managing attention, the paper highlights the methodology of the AttentionScape for measuring attention. The paper concludes by suggesting that truly sustainable solutions to the attention management problem can only be obtained through the art and science of dynamic meditative attention according to the ancient art of meditation enshrined in the Zen Buddhist philosophy, and the psycho-spiritual science of Raja Yoga embedded in the yogic tradition of Indian psychology.

Key -Words : Attention; Attention Deficit Disorder (ADD); Attention Economy; Attention Management; AttentionScape; Psychobiology of Attention; Dynamic Meditative Attention; Zen; Raja Yoga.

1. Introduction

Noted economist and Nobel Prize winner, Herbert Simon (1971; 1997) was indeed prophetic in his assertion: "What information consumes is rather obvious: It consumes the attention of its recipients. Hence, a wealth of information creates a poverty of attention and a need to allocate attention efficiently among the overabundance of information sources that might consume it." The New Economy, revolutionized by the advancements of information and communication technologies (ICT), produces torrents of information leading to an unrelenting demand for attention. The boom of ICT and the concomitant "information chaos" (Postman, 1993, p.119) impinges strongly upon human capability and performance. The confusion brought about by too much information destabilizes our ability to apply technology to anything except our instrumental economic needs and values. Our incapacity to ride the surging waves of information leaves us floundering and weakens our ability to address significant issues of imminent social and ecological concern. Technology and the information overload that it creates appear inept in helping us solve many of our critical social and environmental problems, such as war, crime, terrorism, child abuse, racism, starvation, climate change, environmental catastrophe, and the loss of biodiversity. This is because "...our most serious problems are not technical, nor do they arise

from inadequate information" (Postman, 1993, p. 119). But, it cannot be gainsaid that technology's ability to fundamentally change the way we live and learn simply at the click of a mouse creates a radical shift in our world-views and in our perception of organisations. More importantly, it challenges human beings to become conscientious and attentive consumers of information.

In an "info-glut" environment, there is little time for introspection or contemplation. Yet, it is true that we human beings, due to the innate nature of Homo sapiens, work best when we are given the mental space and time to reflect before acting. So, in order that organisations are better able to map internal and external reality to enhance their effectiveness, it is imperative to assess (1) how much room we have for concerted attention and reflection, and (2) how much does an attention deficit cost us at work, at home, and in society at large. In the New economy of cyberspace, the pressing problem for business leaders is not the non-availability of information but the inadequacy of human attention that must be allocated to all the information that is produced and made accessible to us. Attention is at a premium partly because information has become less expensive over the years.

2. The Attention Management Problem

Research conducted at the Accenture Institute of Strategic Change in Cambridge, Massachusetts, by senior research fellows, Thomas H. Davenport and John C. Beck, reveals the startling fact that attention and not information is the scarce resource in today's economy, and that as a resource, attention needs to be managed. The essential corollary that emerges from this finding is that attention management plays a vital role in weaving a company's success story, and accordingly, corporate leaders must shoulder the responsibility of helping themselves and the people in their organisations to learn how to manage attention (Beck and Davenport, 2001). A study by Davenport and Volpel (2001) shows that knowledge management is the key success factor of today's business leaders, and, within knowledge management, attention management has become the dominant success factor. In future, the quality of attention management is likely to decide which businesses will be the leaders of the New Economy.

The core of the information management problem is no longer a shortage in terms of telecommunications bandwidth but a shortage of human bandwidth (Davenport and Beck, 2002, p. 49). Human attention is a non-renewable, perishable resource that surpasses knowledge and capital today, as a determinant of business success. Attention should not be confused with awareness in as much as it signifies the ability to bring items into focus and the choice to act (or not to act) on them. The problem of attention deficit stems intrinsically from the present limits of human consciousness, especially owing to a general lack of understanding of the concealed powers of the human mind. Therefore, the long-term solution to managing attention obviously lies in a spiritual transcendence of the mental/intellectual plane of consciousness to a higher consciousness.

Thomas Davenport, Boston University professor and expert on knowledge management surmises that the issue of managing attention is very new in the world of business, and therefore, nobody (individuals or organisations) as yet, has expertise in managing it. This is largely owing to the fact that most business people have all along focused on the tasks of the First World Information War (1954-1998) that was fought over how to bring vast amounts of information, and subsequently,

explicit knowledge to the desktop. The Second World Information War, the seeds of which have already been sown, is over getting individuals and organisations to use information effectively. Time, and more specifically, the attention we are willing to devote to each task, is the real issue at hand.

Today, information in vast quantities is available to us at the click of a mouse, but there is little guarantee of being informed by it, learning from it, or acting on it unless there is enough free attention to devote to the information. Davenport and Prusak (1997), while elucidating the characteristics that determine the value of information in business enterprises, mention the quality of "accessibility". Contrary to popular belief, access to information does not only involve being able to lay one's hands on it by investing in ICT, but also entails focusing the mind around it, and subsequently being able to understand it. "Accessibility is made possible by the discovery of structure ...unique to a specific subject that allows readers to find what interests them so that they feel no guilt about ignoring what does not" (Wurman, 1989, p.45). Thus, accessibility of information has to be ensured at three levels:

- Physical access is guaranteed by availability of the appropriate source(s) of information, usually made possible by connectivity.

- Mental access entails directing the user's attention to the right type or segment of information in the source or document.

- Cognitive access ensures an understanding of the information to which the user's attention is directed.

In this connection, Davenport and Beck (2001, p.3), who are acclaimed in academia as the gurus of the attention management movement, observe: "What is it that makes the economy hum, but is not growing? What's the limiting factor behind all those Web pages, business plans, strategies, books and articles, marketing initiatives, partnerships and alliances, and expansion initiatives? An attentive human mind...It's easy to start a business, to get access to customers and markets, to develop a strategy, to put up a Web site, to design ads and commercials... Telecommunications bandwidth is not a problem, but human bandwidth is." As the focus shifts towards knowledge capital and human relationships, the most productive business resource is attention.

Bennis (1989, p. 35) maintains that the problem with most successful organizations today is that they are over-managed but under-led due to the paucity of holistic leaders capable of managing attention. Such organizations excel in the ability to manage all the routine inputs on a daily basis, and yet may never question whether the routine needs to be done at all. After all, routine problems are easy to handle putting the problem solver in a comfort zone, and so, as managers, we are prone to becoming 'victims of a vast, amorphous, unwitting, unconscious conspiracy that prevents us from doing anything whatsoever from changing the status quo'. Based on this observation, Bennis goes on to formulate Bennis's first Law of Academic Pseudodynamics: "Routine work drives out non-routine work and smothers to death all creative planning, all fundamental change in an institution". Thus, while identifying the four competencies that constitute a good leader, Bennis prioritizes management of attention above everything else. The other essential attributes that must work as complements are management of meaning, management of trust, and management of self.

Currently, most information system leaders and chief information officers (CIOs) within companies have proven proficiency as information providers to connect their organisations and the people within them. What they are not yet adept at, and have even failed sometimes, is in winning their attention. This applies to internal as well as external customers. Today, the average manager receives more than 100 voice mail and e-mail messages a day, so that the attention is always wandering. Furthermore, the burgeoning volume of information is being thrust not on a steady state audience because the staffs in most organisations are becoming leaner by the day. Here then is a pronounced asymmetry-more information and fewer people-this is at the heart of the acute attention deficit disorder that so many companies are victims of today. A study by the Institute for the Future (1998) shows that today's workplace represents "a two-hundred-per-day communications environment" where 71% of white-collar workers said they felt stressed by the amount of information they received each day, and 60% were outright overwhelmed. These observations are indicative of the reality of info-stress in present-day work environments, even though there are few visible signs of aberrant employee behaviour owing to such stress. This explains why company CEOs have deterred from questioning the gravity of the info-stress problem and failed to address the attention management issue seriously.

As attention managers, the problems for business leaders lie on both sides of the attention equation: (1) how to get and hold the attention of various stakeholders, and (2) how to parcel out attention to each stakeholder in the face of innumerable options and conflict ridden situations. Individuals and organisations who can do both these things are more effective performers than others; in other words, it may be postulated that the understanding and management of attention is now the single-most important determinant of business success (Davenport and Beck, 2001, p.3). To control attention is to be able to control our experiences, and hence, the quality of life. Information can reach our consciousness only when we attend to it.

3. The Scope and Objectives of the Study

The theme and content of the present paper stands distinctly upon five pillars of inspiration. Although, they represent different strands of thought propounded at different points of time, this paper seeks to integrate them meaningfully. Firstly, Herbert Simon's (1971) landmark assessment of the information-glut/attention poverty paradox made almost two decades before the Internet became a lifestyle statement appears prophetic today, as all "netizens" (citizens who access the Net regularly) are increasingly overwhelmed by the information chaos. Simon's remarks, therefore, serve as the prelude to all ensuing deliberations made in the paper. Secondly, the confessional statement of Warren Bennis (1989, p. 35) formulated as Bennis's First Law of Academic Pseudodynamics, which could be universalised, without doubt, to apply to all work-life situations, provides food for thought for people of all walks of life, particularly academia, where work is meant to be largely "knowledge" intensive. Bennis attributes the failure of efficient managers of success driven organisations to be holistic leaders because of their incapability of managing attention. Thirdly, this paper builds upon Michael Goldhaber's (1992a; 1997; 1998) conception of a new, emerging "attention economy" based on a different set of rules from the industrial economy. Several symptoms of today's global economy suggest that the attention economy will become increasingly dominant in the future. Fourthly, this write-up derives its contemporary relevance in the realm of business management by alluding to findings from the research undertaken by Thomas Davenport and John Beck (2001) at the Accenture

Institute of Strategic Change in Cambridge, Massachusetts. Their study highlights a general lack of understanding of the concept and significance of attention among managers and the absence of necessary attention management skills among present-day corporate leaders and corporate information officers (CIOs). The authors have delineated the idea and typology of attention from a managerial standpoint, and have also provided useful insights about how to measure and manage this newly discovered intangible resource. Finally, the central pillar of the paper stands astutely upon two sources of eternal wisdom for seeking sustainable solutions to the contemporary challenge of attention management. The first is the art of meditative attention embedded in Zen Buddhist philosophy and championed by Zen masters over the ages. The second is the well-documented treatise on the spiritual science of training the mind encapsulated in the Indian psychological tradition of Raja Yoga as explained by Swami Vivekananda (1928; 1944) and the practice of dynamic meditation enshrined in the system of Integral Yoga pioneered by Sri Aurobindo (Sri Aurobindo Birth Centenary Library [SABCL] Vol. 20; 21; 22; 23).

The five pillars, cited above, serve as the foundation of the overall structure of the present paper, which purports to address the following issues :

1. The contemporary problem of attention deficit disorder (ADD);
2. The concept of attention
3. A workable typology of attention;
4. The basic principles underlying the working of an attention economy;
5. The scope of attention management and effective ways of dealing with it;
6. Measurement methodologies and tools for attention management;
7. Correctional strategies for addressing attention imbalances; and
8. Sustainable attention management solutions through the art and science of meditative attention.

4. Attention Deficit Disorder (ADD) — Observations of Psychologists

Although attention management has been a thoroughly researched therapeutic strategy in clinical psychology, signs of the attention deficit problem as a societal phenomenon have become conspicuous only over the last decade. Earlier generations of citizens did not have an attention problem, as there was no Internet and consequently, no information explosion. The following statistical facts (Achenbach, 1999; Magazine Publishers of America, 1999) help to indicate the intractable attention deficiency problem of our time:

- In the days of Gutenberg, it took many years for a few dedicated scribes to create a single copy of a single book. Thus, in 1472, the best university library in the world at Queen's College in Cambridge housed only 199 books. Today, 300,000 books and 400,000 scholarly journals are published worldwide every year.

- Internet traffic doubles every hundred days. There are more than 2 billion Web pages in the world. There are 11,400 distinct electronic databases on the market.

- The Sunday New York Times contains more factual information in one edition than was available in all the written material available to a reader in the 15th century.

- A literate medieval person could read a book only as fast as a modern-day high school student. The problem then was not finding time to read, but finding enough reading to fill the time.

These facts point out starkly that today's Internet-proficient society is the first in human history that is afflicted with Attention Deficit Disorder. We all understand and live the attention deficit problem at some level and to some degree everyday. But, we scarcely recognise it or try to understand how to manage attention. Attention Deficit Disorder, which is fast becoming a global psychological aberration, is the outcome of a mutually reinforcing cycle of events: As scientists increase in number and specialisation, they uncover more new knowledge about the physical universe, which serves as the basis of creation of new technologies; this in turn speeds up the search for knowledge and promotes technologies used to communicate more information to more people. They, in turn, create more (explicit) knowledge that has to be communicated to other people within the organisation, thus creating the need for more bandwidth.

Attention Deficit Disorder (ADD) or more precisely, Attention Deficit Hyperactivity Disorder (ADHD) is identified by Western psychologists as a neuro-biologically based disorder, characterised by a symptomatic triad of inattention, impulsivity, and hyperactivity (American Psychiatric Association, 1994). Until recently, professional psychiatrists viewed ADHD as a transient childhood disturbance in which symptoms of distractibility, decreased impulse control, insecurity, and restlessness were believed to dissipate during adolescence and seemed no longer evident in adulthood (Wender, 1987). Since many signs of the disorder were believed to cease with maturation and development, ADHD had been viewed as a diagnosis that was not applicable to adults (Nadeau, 1995). Recent longitudinal studies, however, have provided ample evidence that ADHD may be a chronically disabling condition, and researchers have unanimously reported findings of continued and augmented impairment as children diagnosed with ADHD age into adulthood (Biederman et al., 1993; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993). The American Academy of Child and Adolescent Psychiatry (1996) points out that children who watch a lot of television are more prone to ADD-they have lower grades, read fewer books, and exercise less. Although adults with mental health problems are often understood as having discrete disorders, there is growing evidence that a childhood history of ADD is more than a coincidental factor in adult psychiatric problems. Ratey, Greenberg, Bemporad, and Lindem (1992) evaluated adult clients with significant but undiagnosed childhood and current adult symptoms of ADHD. They argued that a diagnosis of ADHD had been overlooked because these clients presented atypical symptoms or had found ways to compensate for difficulties in their lives.

Biggs' (1995, pp.35-57) study attempts to establish that for ADHD to exist in adulthood after it has been determined to have existed during childhood, clients will continue to experience similar symptoms associated with childhood ADD into adulthood, such as (a) persistent motor activity (i.e., restlessness, inability to relax, nervousness, inability to persist in sedentary activities, continually active, and dysphoria when inactive) and (b) attention deficits (i.e., inability to keep the mind on conversation, distractibility, inability to concentrate on reading materials, difficulty focusing on the job, and frequent forgetfulness). In addition, Wender (1987) required evidence of two or more of the following symptoms: (a) affective lability (i.e., mood swings), (b) inability to complete tasks (i.e., lack of organisation, inability to stay on task, and

difficulties with planning), (c) inability to control temper (i.e., explosiveness, prone to outbursts, transient loss of control, and irritable), (d) impulsivity (i.e., makes decisions quickly without considering consequences and has difficulties with delaying actions), and (e) intolerance to stress (i.e., reacts inappropriately and excessively to stress). Adults with ADHD may develop and continue negative attitudes because they perceive that nobody understands how difficult it is for them to work steadily, become organised, keep friends, and set goals for themselves. They become even more discouraged when people around them give advice on how they "should" act and who they "should" be (Gittelman et al., 1985). Because inattention is a primary characteristic of adult ADHD, attention management skills need to be addressed. Learning to control attention, through such techniques as focused attention, sustained attention, selective attention, alternating attention, and divided attention, will help ADHD adults monitor their own behaviour and become more productive (Nadeau, 1995). Attention management skills include strategies to learn more efficiently, such as being able to solely attend to a lecture and disregard other activities going on in the room, even though they usually take a long time to learn.

Increasing instances of ADD are identifiable in that excessive use of information and telecommunications technologies, especially via the Internet creates "info-stress" i.e., the adverse psychological impact of constantly feeling overwhelmed by the imbalance of the information we must work with over our available attention span. Over the last fifteen years, ADD is diagnosed with increasing frequency in individuals, both children and adults. This is corroborated by the fact that production of Ritalin, the primary drug used to treat ADD, has increased by nine times since 1990 (Drug Enforcement Administration, 2000). Today, ADD afflicts even organisations to manifest as "organizational ADD" in attention deficient organisations. Like its individual counterpart, the symptoms of organisational ADD are: (1) Missing key information when making decisions; (2) diminished time for reflection on anything except simple routine information transactions such as e-mail; (3) difficulty in holding other's attention (both the number and quality of messages to get and keep attention); and (4) decreased ability to focus when necessary (Davenport and Beck, 2001, p.7).

5. Attention Economy — The New Economy of Attention Deficiency

Viewed from an economic standpoint, recent clinical evidences of the incidence of ADD indicate that in the new economy there is no dearth of capital, labour, information or knowledge; the obvious scarcity is one of human attention. Nations all over the world, especially the industrialised ones, have shifted dramatically toward an economy where an increasing number of workers are no longer involved directly in the production, transportation, and distribution of material goods, but instead earn their living managing or dealing with information in some form. Most economists and management theorists call this phenomenon an "information economy." However, Michael Goldhaber (1997), professor at University of California, refutes the popular notion of "information economy" as an appropriate descriptor for the New Economy in the following words: 'Well if the Net exemplifies it, then you might guess it (the new economy) has less to do with material things than with the kinds of entity that can flow through the Net. We are told over and over just what that is: information. Information, however, would be an impossible basis for an economy, for one simple reason: economies are governed by what is scarce, and information, especially on the Net, is not only abundant, but (also) overflowing.

We are drowning in the stuff, and yet more and more comes at us daily. That is why terms like "information glut" have become commonplace, after all. Furthermore, if you have any particular piece of information on the Net, you can share it easily with anyone else who might want it. It is not in any way scarce, and therefore it is not an information economy towards which we are moving. What would be the incentive in organizing our lives around spewing out more information if there is already far too much?' Goldhaber's refutation leads us to question whether today's global economy is at all an information economy. By definition, economics is the study of how a society uses its scarce resources. By no means is information scarce today; particularly on the Internet, there is information glut. Goldhaber indicates perspicaciously that we are already drowning in information, and yet we choose to increase its generation constantly. In such a circumstance, we actually face a dearth of attention to information, and not information per se. Being scarce, attention has the potential to create the foundations of a rich, complex and radically different economy (Goldhaber, 1992) from the present industrial market-driven economy. Goldhaber's label of "attention economy" (1997) is an appropriate descriptor for the simple reason that it pinpoints a resource that is, "an intrinsically scarce resource", limited by the number of people with attention to give. Attention is scarce because the total amount per capita is strictly limited. In its pure form, an attention economy does not involve any sort of money or market. It involves a different pattern of life than the routine industrial one with its work/home, work/ play and production/consumption dichotomies. In such an economy the most significant activity is seeking, obtaining and paying attention.

6. Principles Underlying an Attention Economy

With the maturity of the attention economy many radical changes may be expected, primarily because the attention economy is based upon new and different working principles from those inherent in an industrial economy (Goldhaber, 1998):

1. The new attention economy comes into its own in cyberspace, and will be based on what is most desirable and ultimately most scarce-the attention that comes from other people.
2. Attention is scarce because everyone has limited amounts of it to give, and it can come only from humans-not machines, computers, robots or humanoids. Hence, for all conceivable projects, exhaustive lists of credits for each person involved, no matter what the role, will become commonplace and necessary in such an economy, just as we see in Hollywood films today.
3. An economy has to be based on something that is fungible, i.e., something that can be passed along, and the most significant aspect about cyberspace-e.g., the World Wide Web-is how conveniently attention passes through hyperlinks.
4. Everyone cannot attract the same amount of attention. Therefore, few people are "stars", but most are just "fans". In the future, the importance of people with celebrity status will increase, with a corresponding decline in power for those who insist on anonymity.
5. Large organisations, e.g., multinational corporations (MNCs) and governments, will witness a declining role because they cannot focus or trade attention easily.
6. Greater the attention directed to someone or to some object, the more that is etched in the memory, and so, the easier it becomes to pay still more attention.

7. Roughly, attention wealth = (size x attentiveness) of past and present audiences.
8. Unlike the old concept of matter-based wealth, the new wealth cannot be stored or put under lock and key. It is obtained by reaching out into the world. It is highly perishable.
9. Expressing oneself fully can, therefore, help to augment attention wealth. The best guarantee for attention being directed at somebody is to live life as openly as possible, expressing oneself as publicly as possible and as early as possible.
10. One can accumulate attention through the full extent of one's personality-all that makes one distinctive and unique from others.

7. The Concept of Attention

Managing attention in the attention economy requires business leaders to grasp the true import of the term attention. Attention is one of the most intensely studied subjects within psychology and cognitive neuroscience. Of the many cognitive processes associated with the human mind (decision-making, memory, emotion, etc) attention is considered the most concrete because it is tied so closely to perception. As such it is a gateway to the rest of cognition. It is a cognitive process of selectively concentrating on one thing while deliberately ignoring other things. Examples include listening carefully to music or to a lecture while ignoring other conversation inside the room and the cacophony in the surroundings. Attention can also be split, such as driving, and talking on the cell phone simultaneously.

The dictionary meaning of attention is "the faculty of considering or taking notice"; it is a "focusing of the mind on something". The term attention is often used synonymously with cognisance, concentration, consideration, deliberation, mark, mind, note, notice, observation, regard, and study. The most famous definition of attention was provided by one of the first major psychologists, William James in 1890 (http://en.wikipedia.org/wiki/Attention, 2005): "Everyone knows what attention is. It is the taking possession by the mind in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought...It implies withdrawal from some things in order to deal effectively with others."

Davenport and Beck (2001, p.21) point out that the word awareness is often erroneously substituted for attention. So, they define attention as "focused mental engagement on a particular item of information that serves as the bridge between awareness and action. Items come into our awareness we attend to a particular item, and then we decide to act" (Davenport and Beck 2001, p.20). On the other hand, awareness implies merely alertness towards and a conscious recognition of a piece of information. It is vague general information and does not of itself catalyse action. Attention, however, is targeted and specific. What information managers are currently engaged in is throwing loads of information into the awareness of recipients. If an issue does not receive attention, it will not result in action; after all, awareness is a precursor of attention, and attention is a precursor of productive behaviour and action. Awareness becomes attention when information reaches a threshold of meaning in our brains and spurs the potential for action. Hence, attention and awareness are by no means interchangeable terms; instead, they are concepts linked in a mental sequence. To use the analogy provided by Davenport and Beck (2001, p. 22) 'awareness is the target, and attention the bull's eye'. Exhibit 1 shows the relationship between the three concepts of attention, awareness, and action.

Exhibit 2: Relationship between attention, awareness, and action
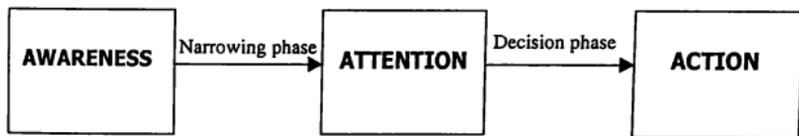
Source : Davenport and Beck, 2001, p. 21

Attention is the bridge between the confusion about the world resulting from "information chaos" through increased awareness, and the decisions and actions that we must take to improve quality of life on the planet. It involves a deep understanding of how to work with an over abundance of information by serving as a filter between outside events and our experience with them. Therefore, our ability to manage attention will determine the degree of information-stress that we experience.

8. Types of Attention

In order to provide a "nuanced understanding" of attention, it is possible to identify six different types of attention that can be paired into three dimensions (Davenport and Beck, 2001, p.22). Each pair contains two opposing kinds of attention:

1. Front-of-mind
2. Back-of-mind
3. Attractive
4. Aversive
5. Captive
6. Voluntary

The first category of attention comprising types 1 and 2 is concerned with the level of consciousness involved. The second category of attention, namely, types 3 and 4 are linked to motivation-the stick or the carrot. The third category of attention, including types 5 and 6, has to do with the degree of choice that can be exercised. At any given moment, the attention of people-customers, employees and other stakeholders can be described as any one or a combination of these six different types of attention-all of which can happen simultaneously. The three paired opposite attention categories are:

- **Front-of-mind and back-of-mind** — Focused front-of-mind attention is necessary for learning new tasks or information, but when these become more familiar and routine, they are often relegated to back-of-mind attention.

- **Attractive and aversive** — People devote attractive attention to elements they admire and expect to be pleasant. On the contrary, they pay aversive attention when they are afraid of the consequences of not paying attention.

- **Voluntary and captive** — People pay voluntary attention to things they find innately interesting, but attention is held captive when people have something thrust on them.

9. The Scope of Attention Management

Attention management involves the recognition and acceptance of the effect of human biology and psychology on attention, and working with that knowledge to draw as much attention as possible to tasks that make companies productive (Davenport and Beck, 2001, p.67). Often, attention management is mistakenly confused with other well-known concepts, such as : (1) *Advertising and customer relationship management*. Although linked to these concepts, attention management is broader in scope. Advertising, for instance is an effective attention management strategy. (2) Time management. In the absence of a precise measurement unit for attention, we often use some unit of time (e.g., the total time an advertisement is displayed on TV) as a surrogate measure. But, sometimes time can be a poor proxy of attention when something to which a lot of time is allotted may receive minimal attention (e.g., boring classroom lectures).

10. Effective Ways of Managing Attention

The new generation business leaders are perplexed by the battle for attention. In this regard, research conducted by Davenport and Beck (2001) reveals that 'leaders today need to pay more attention to attention because it is widely misunderstood and widely mismanaged. People may be paying attention to all the information coming at them but rarely in the ways that leaders would want or expect'. Accordingly, a key attribute of corporate leaders today is, firstly, to hone their own attention skills. They must be aware of the fact that whether or not they know where and how they spend their attention, the concerns and goals they focus on do impinge upon their employees, who make decisions about what is important based upon their perceptions of what their leaders are paying attention to. Consequently, leaders have to be more careful about how they invest their attention. Therefore, to lead and manage well, it is necessary to be self-aware, and to clearly communicate attention goals to employees and customers. To develop this attribute, executives must recognize where their attention is directed and discern if it is appropriately and effectively aimed. For this, the following steps are important:

* **Knowing Oneself**

Research cited by Davenport and Beck (2001) demonstrates that self-aware leaders are the most successful at directing the attention of others. In this respect, the following guideposts may be useful —

   a) Attention managers should publicise their attention-spending pattern by telling others about the items in their field of attention. In the process, they themselves can become more self-aware.

   b) Attention managers should be able to obtain feedback from those around them, because family, friends and employees often have a better understanding of how managers spend their attention than they themselves do.

   c) An assistant should be employed to record any meeting during the workday. After the meeting, the attention manager should try to write down every item covered in the meeting. Subsequently, he should listen to the recording and assess how efficiently he can recall where his attention goes.

d)   Diagnostic tools should be used to measure one's attention type and composition. Davenport and Beck (2001) have developed a self-reporting tool called AttentionScape to assess how people and organisations allocate their attention (http://www.attentionscape.net).

• Creating Attention Agendas

Attention management is different from time management. This is very evident when our mind wanders during a tedious meeting, a boring movie or a monotonous lecture. To highlight this difference, it is necessary to create attention agendas that involve an estimation of the total amount of attention attendees are expected to spend on meeting topics. Considering a total of 100%, the agenda should be framed accordingly, based upon the percentage of attention that should be devoted to specific items and ideas. For this purpose, it is necessary to ask oneself what areas most deserve attention so that it is possible to parcel out time appropriately. For example, perennial concerns like regulatory control and security may not feature as issues on which the CEO of a large company should focus attention on a regular basis. Another instance of parcelling out time is when setting the agenda of a meeting. If a given topic is significant and is expected to take up more than 50% of the attention of members, then it should be placed as the first or last item on the agenda in order to grab maximum attention, while the middle of the meeting should be taken up with the least important issues (Davenport and Beck, 2001, p.32).

• Creating Attention Guards

If overworked employees must focus on and discuss threadbare about a new initiative, then they must be relieved of responsibility for focusing on something else. Asking people in other areas not to call during an intense project may create "buffers" around such individuals. Additionally, an "attentional assistant" (such as secretary) may be hired to manage the firm's logistical issues, freeing up energy, time and mental space for key managers and other personnel to focus on a new initiative. Information management policies may also be designed in a way so as to discourage sending non-essential information like jokes and the like to key managers. New routing and filtering technologies may also be applied to limit information flow.

• Measuring Organizational Attention

Information system managers can use technology in the form of diagnostic tools, such as the AttentionScape (Davenport and Beck, 2001, pp.38-40) to measure corporate attention. Also, it may be worthwhile to analyse traffic on the World Wide Web to recognise where focus is being diverted, and to observe or visit discussion-oriented intranet sites within the company to see what people are discussing or talking about. Software programs may be employed in order to analyse the content of e-mail messages at an aggregated level (sneaking into individual messages should be refrained from as this is unethical). If it is necessary to find out the intensity of use of a particular information channel, prizes may be offered to someone who responds to a message embedded deeply within the channel.

• Diagnosing and Correcting Attention Imbalances

Measurement of organisational and individual attention through diagnostic tools (such as the

AttentionScape) help to track the composition of individual, team-based or organizational-level attention, and for signalling imbalances in our attention patterns. An excess or deficiency in any of the six constituents of human attention can adversely affect organisational performance, and so, if any imbalance is detected, appropriate remedial strategies should be devised and implemented.

- **Paying for Focusing Attention**

As far as possible, non-essential work should be outsourced. But it is necessary to exercise caution in this regard so as not to outsource the "baby with the bathwater". Outsourcing decisions are typically strategic in nature, and call on managers to identify a company's critical success factors and core competences with respect to its internal and external value chains. Secondly, a company may hire a consultant to "pay attention" to important business issues and to constantly track and evaluate the performance of external service providers. Thirdly, positive rewards (such as simple recognition or prizes) can go a long way in winning attention.

### 11. Measurement of Attention-The Application of the AttentionScape

Attention management requires attention measurement. In order to improve the state of self-reported attention measurement, Davenport and Beck (2001, p. 38) have created the AttentionScape, which is a self-reporting diagnostic tool to measure attention. It assesses in a rigorous and conclusive manner how people and organisations allocate their attention. The AttentionScape helps companies diagnose attention distribution problems, determine how the company is directing employee attention, analyse the extent of attention the company is getting from its customers and clients, and/or complete any task that requires a detailed understanding of attention levels

The AttentionScape is devised to measure the six different types of attention-captive, voluntary, aversion-based, attraction-based, front-of-mind and back-of-mind-and how they can be combined. Skilled attention managers know how to produce high levels of all six types of attention simultaneously or separately, as the need may be. The AttentionScape can measure both the type and level of attention, and explains how to understand and interpret these measurements. The use of the AttentionScape involves four important steps:

1. *Listing* — The first step involves making a list of items that occupy an individual's/ team's/organisation's attention within a specific time frame.

2. *Testing* — This implies responding to a set of six questions for each item on the AttentionScape with answers ranging in a Likert-type 5-point scale from "strongly agree" through "somewhat agree", "neither agree nor disagree", "somewhat disagree" to "strongly disagree". The six questions are-

   ■ Did you concentrate/ spend quality time on it?

   ■ Are you excited by it; does it make you happy?

   ■ Is it necessary/imperative; can you avoid it?

   ■ Would you suffer negative consequences if you did not pay attention to this?

   ■ Was it on your mind or at a subconscious level?

   ■ Did you choose to focus on it voluntarily?

3. *Charting* — After all the responses are entered, a full-colour attention chart of a respondent's profile is drawn up (as shown in Exhibit 2). The attention chart shows each topic as a circle positioned in a graph that indicates the following:

➢ The size of the circle indicates more or less attention a topic is receiving.

➢ The position on the y-axis indicates whether attention was front-of-mind or back-of-mind-top half of the chart represents the zone of conscious attention, and bottom half represents the zone of subconscious attention.

➢ The x-axis indicates the captive or voluntary aspect of attention-the right side shows items that get voluntary attention and the left shows captive-attention items.

➢ The intensity of colour of each circle denotes whether a particular topic is getting more attraction-based (green shade) or a version-based (grey shade).

➢ The size of the circle indicates the prominence of the issue to the respondent, and the coordinates locate that issue (e.g., clients, team, projects, etc.) on one of two dimensions- "voluntary"/"captive" attention to the issue (x-axis) and "front-of-mind"/ "back-of-mind" attention (y-axis).

4. *Interpretation* — The key to collating useful information from an AttentionScape analysis is to view the chart as a "bull's eye target" (Davenport and Beck, 2001, p.41). The most effective attention will go to items that figure near the intersection of the x-axis and y-axis. When analysing a layout, the first thing to look for is the presence of any imbalance, which is evident if most of the items on the chart tend to cluster in one area leaving the other areas of the chart vacant.

Exhibit 2 : The AttentionScape
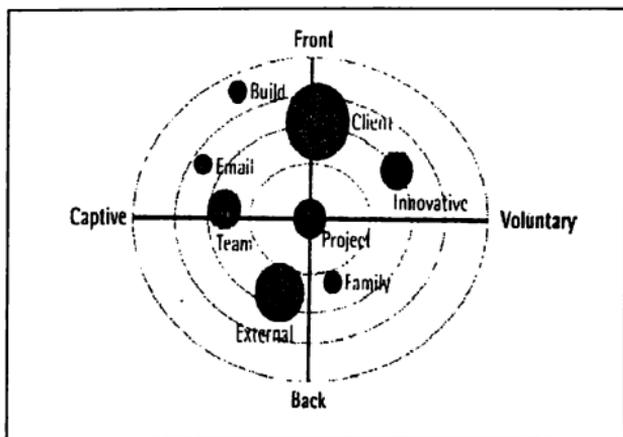
12. Managing Attention as a Psychobiological Phenomenon

Viewing attention purely as an economic phenomenon distorts its reality, because economics assumes that rational actors make deliberate investment choices to optimise their returns. In reality, much of what determines where people invest their attention is not guided by pure reason. As a matter of fact, one of the most important factors for gaining and sustaining attention is engaging people's emotions. Our obsession with focusing on life-and-death issues has caused the evolution of the human nervous system to focus attention to some things more than others. Attention managers should be as cognisant of the psychobiology of attention as they are of its economics. Davenport and Beck (2000) associate the following four lessons with the psychobiology of human attention.

1. *Scaring people is a good way to win their attention* if the threat is genuine, and the tactic is not used too often. Otherwise, people will stop believing that the threat is real. For example, if a non-venomous snake were to appear suddenly inside a lavish conference room, it may be presumed that even the most eloquent speech would be interrupted, and every bit of (aversive) attention in the room would zero in on the snake.

2. *Competition urges people to pay attention to goal attainment*, because competitive urges in people are natural, being partly instinctive, and partly an outcome of cultural conditioning. For example, the Malcolm Baldridge Award for Quality has helped employees in quality-oriented organisations to focus on ways and means to win the prize. Even internally within an organisation, competition can spur people towards excellence if the work-unit that creates most value is rewarded. Thus, competitive rivalry makes the achievement of excellence in work more compelling for everyone.

3. *External distractions should be minimised to keep people focused on the core message.* The worst distraction for employees in most organisations is the diversity of internal programmes/projects that compete for their attention. Nowadays, many companies provide services to tackle the problem of minimising distraction at work by offering to help employees with their personal domestic chores, such as concierge services available for queuing at the registry of motor vehicles so that overburdened employees can focus more on their work.

4. *Co-creation helps attract people's attention because they want to feel engaged.* If people invest something of their own, they remain more committed to the task than if they feel like passive observers. Co-creation makes people feel important, and also makes it difficult for them to disengage. People who have helped to make something happen stay involved and interested. Personalization and customisation are effective forms of co-creation and powerful tools of directing attention because they require the service user/customer to invest some time to report preferences for the type of service they would like to receive.

13. Summary and Conclusions

The foregoing discussions appear to suggest that the contemporary concern for attention and how it can be managed are all rooted in the western philosophy of science that decries subjectivism (i.e., dealing with subjective elements and experiences). To quote Swami Vivekananda

(1993, p.334): 'to the Oriental, the world of spirit is as real as to the Occidental is the world of the senses. In the spiritual, the Oriental finds everything he wants or hopes for; in it he finds all that makes life real for him. To the Occidental he is a dreamer; to the Oriental the Occidental is a dreamer playing with ephemeral toys...' The challenge of managing attention needs to be contemplated holistically as a continuous process of spiritual evolution. Western answers to this currently perceived problem are crass and smack of short-termism. Lasting solutions to the attention management problem do not lie solely in our understanding and application of the economics, technology or even the psychobiology of winning human attention put forward by different strands of Western research.

Sri Aurobindo (1997; SABCL vol.16: 258) had noted the deficiencies inherent in an objectivist science in the early part of the last century but they are equally pertinent today: (1)"the materialistic error which bases the study of the mind upon the study of the body; (2)"the sceptical error which prevents any bold and clear-eyed investigation of the hidden profundities of our subjective existence; (3)"the error of conservative distrust and recoil which regards any subjective state or experience that departs from the ordinary operations of our mental and psychical nature as a morbidity or a hallucination; and finally, (4) "the error of objectivity which leads the psychologist to study others from outside instead of seeing his true field of knowledge and laboratory of experiment in himself. The key to human development lies in a spiritual evolution by working from inside out. Without a radical inner revolution in our consciousness, there cannot be any true revolution in the society. External processes of attention management concentrate primarily on the external organisation of the attention resource and obscure the inner management of the faculties of knowledge within the individual. The emerging challenge of managing attention calls for new ways of conceiving knowledge more deeply. According to modern science, the mental activities of a human being appear to depend almost entirely upon his body and his nervous system. This dependence is largely construed as an identity. It has 'tried to establish that there is no such separate entity as mind or soul and that all mental operations are in reality physical functionings. Even otherwise, apart from this untenable hypothesis the dependence is so exaggerated that it has been supposed to be an altogether binding condition, and any such thing as the control of the vital and bodily functionings by the mind or its power to detach itself from them has long been treated as an error, a morbid state of the mind or a hallucination. Therefore the dependence has remained absolute, and Science neither finds nor seeks for the real key of the dependence and therefore can discover for us no secret of release and mastery' (Sri Aurobindo ,1988, p.514).

It is worth noting that a pre-occupation with the human faculty of attention is not altogether new, nor is it the sole concern and predilection of the new generation of Internet users. Going back to the ancient Indian psychology of Yoga, the human capacity of attention has been extensively researched and documented in the science of *Raja Yoga*, which concentrates upon an analysis of the mind. Patanjali formulated *Raja Yoga* into a definitive system of classical yoga and of Indian philosophy. The school of *Raja Yoga* prescribes a particular meditative system, which focuses on the analysis and control of the field of human consciousness. Often known as the 'royal road' or the 'royal path' (*'raja'* in Sanskrit denotes 'king' or 'royal'), it offers a comprehensive method for controlling waves of thought by channelling mental and physical energies into spiritual energy. Also known as *Ashtanga Yoga, Raja Yoga* involves an

eight-step process as described in the Yājñavalka Samhitā (1/45)-

> 'Yamaśca niyamaścaiva āsanañca tathaiva ca.
> dhyānam samādhiretāni yogāṅgāni varānane'

[Know thou, O Gargi, that this Yoga comprises eight parts-Yama, niyama, āsana, pranayama, pratyāhāra, dhāranā, dhyāna and Samādhi]

Raja Yoga involves an accumulation of the facts of the super-sensuous world to build up the spiritual world because the basic premise is that concentration of the mind is the source of all knowledge. The human mind is considered the only means of acquisition of knowledge and the primary instrument of observation of inner states. Mind acts in and under consciousness. What we call consciousness is only one link in the infinite chain that is our nature (Swami Vivekananda, 1928, p.1). 'Through faithful practice, layer after layer of mind opens before us, and each reveals new facts to us' (Swami Vivekananda, 1928, p.2). We are thus able to perceive new worlds created before us, and new powers implanted in us. The great power of attention, when properly guided, and directed towards the inner world, will analyse the mind, and illumine facts for us. *Raja Yoga* espouses the concentration of all the energies of the mind into one focus as the one method by which knowledge may be truly attained (Swami Vivekananda, 1993). In *Raja Yoga*, the mind is the key to all the closed doors of the Yoga (Sri Aurobindo, 1988, p. 514). The goal of Raja Yoga is to quieten the mind through meditation. During meditation an individual's attention is focused on a specific object, mantra, or concept. Once the mind has stopped wandering and has completely focused on the object, the yogi will emerge with his higher self. According to RajaYoga, the mind is made up of two parts. The manifest mind is ashuddha or the impure mind because of its distractions in the material world of senses and objects. It is due to these distractions that the mind is unable to naturally express its qualities and, consequently, experiences information stress. Thoughts remain unclear, and there is no clear direction for our actions and motivations. Therefore, we are influenced by likes and dislikes, and we are aware only of the surface currents that disturb our entire life process. The shuddha, or pure mind, is the developed, harmonised, concentrated mind that relates to the spiritual dimension and its interaction with the external world.

Zen Buddhist philosophy, too underscores the need for an undivided focus and full attention of disciples that must be absolutely task-centred, because it is the conscious execution of ordinary tasks that leads to fulfilment and in-depth understanding. The essence of Zen is to use attention as the single most important tool not only during meditation, but also in daily chores, as chopping wood and carrying water (Beck, 1993). Literally, Zen refers to a tranquil focusing of the mind through meditation, concentration or dhyana. It is a synthesis of the inner and outer reality fusing into a spontaneous flow of mind. Zen is liberating the mind from convention and opening the doors of creativity. The fact that Zen stems from a degree of concentration reflects the need to interject focusing powers and build up inner strength that moves and works in harmony with the higher cosmic order. This process demands a lot of synergy and attention (Singh, 1998).

The corporate exercise of strategic management, which underscores the management of knowledge and attention as critical success areas, is actually based on operationalising the process of focusing of mind. A manager is challenged to continuously think of his time, inner resources and strategic environment objectively to develop adaptable strategies to cope with

the turbulence in the business environment. Choosing the right strategic direction that can ensure long-term effectiveness and sustain competitive advantage of an enterprise, involves managers in focusing the mind to become aware of new paths. A constant effort to concentrate and focus the mind through brain stilling, thus, becomes a natural way of behaviour and action for a manager, as time goes by. Brain stilling (as opposed to brainstorming) urges the decision-maker to withdraw from mundane life problems, sit in silence, still one's mind, invoke peace, absorb the silence around, find the same silence inside the being, concentrate on the problem, meditate over the situation, and patiently wait for the inner and higher guidance to reach the solution. In this context, silence does not merely symbolise the absence of speech, but a perfect calm in body, mind and heart. Holistic solutions to problems can never be taken in a state of turmoil when the human mind is overwhelmed by excitement and hyperactivity. Attention managers must develop the ability to stand back and provide a right sense of reality not through inert indifference but by transcending the situation. For this, an effective leader of the future must have a deeper awareness of the value of detachment and see himself increasingly as a cosmic performer within the ebb and flow that occurs through business and life, both for his personal as well as social well being.

Being attentive is not a practice that needs to be confined to an orthodox crossed-legged posture. Meditative attention is a dynamic practice of paying close attention to what is being done, irrespective of the nature of the task at hand, the posture of the person, and the time and place of work performance. This involves a strategy of being fully aware of all one's activities through a conscious orientation to all the human senses. According to Indian psychology, there are six senses that help to cultivate knowledge-sight, hearing, smell, touch, taste and mind. All of these senses except the last one are externally directed as they gather the material of thought from the external environment through the physical nerves, and their end-organs in the form of eyes, ears, nose, skin and palate. Thus, the two pre-requisites for perfection of the senses as "ministers to knowledge" are accuracy and sensitiveness (Sri Aurobindo, 1990, p. 36-38). These can be enhanced by the Rajayogic discipline of nadi-shuddhi or purification of the nerve system that involves the regulation of the breathing to restore the perfected and unobstructed activity of the nerve channels in order to lead to a high level of activity of the senses. The process of nerve perfection tranquilises the system and quietens all the internal processes and, in this way, enables purification of the mind. Thus, if the nerve channels are quiet and clear, the only possible disturbance of the information is from/ through the mind proper or manas, which is the sixth sense. The information outside is first photographed on the end organ, and then reproduced at the other end of the nerve system in the citta i.e., passive memory. All the images obtained from sight, sound, smell, touch and taste are deposited there and the manas reports them to the buddhi i.e., intellect. Therefore, the manas acts both as a sense organ as well as a channel. As a sense organ, it is as automatically perfect as the others, but as a channel, it is subject to disturbance resulting either in obstruction or distortion. From the point of view of the creator/sender of the message, the more one can concentrate one's thoughts on an object or theme the more light can be thrown on the message being communicated and transmitted. On the other side, the more an audience can concentrate on their thoughts the clearer will be the grasp and understanding about the idea or message that has been conveyed by the sender. It must be noted that as a sense organ, the mind receives direct thought impressions from outside and also from within. Although these impressions are perfectly correct in themselves, they

may not reach the intellect at all or may reach in such a distorted form as to make a false or partially false impression. The mind takes direct impressions not only of thought, but also of form, sound and other things provided by the sense organs.

In the ultimate analysis, it may be said that attention management is essentially a process of putting the mind in constant contact with the inner psychic core-a process of psychicisation of the imperfect mental being of man to infuse perfect accuracy and sensitiveness (Sri Aurobindo, 1970, pp.1092-3). Peter Senge, a perceptive management thinker of our time points out that although many people seem to believe that technology is the major driver of change, actually it brings about mostly superficial changes and can only bring improvement in the outer life of man. However revolutionary these improvements may appear to be from an externalized view, they fail to bring any radical change in the inner nature of the human being. Thus, an attentive mind is not the result of tinkering with sophisticated technologies that deliver unmanageable and adverse psycho-social outcomes. Wherever practised, management of attention, in the true sense of the infinite potentialities of the human mind, is inconceivable without a systematic education of the human mind in its various aspects-the manas, citta and budhhi. Only then, will the full potentialities of the mind's accuracy and sensitiveness be realised as suksamdrsti i.e., subtle reception of images. This concealed power, which is as yet undeveloped in ordinary human beings, will unlock the doors to the mystical pathways of the powers of telepathy, thought reading, clairvoyance, clairaudience, and character reading.

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