Editorial: Types of intelligence in family business: artificial, social and emotional

Intelligence

The main types of intelligence existing in family businesses are artificial, social and emotional. General intelligence involves different kinds of mental abilities related to information processing. Defining intelligence is difficult, as it can be analysed in various ways. Being intelligent can be interpreted based on context. Intelligence involves the ability to understand contexts and behave in an appropriate way. This includes mental abilities in terms of knowing what another person feels. Intellectual intelligence refers to people who score well on tests. This type of intelligence was stereotyped as being the most important type until the early 2000s when emotional intelligence became popular. Intelligence can exist in various formats and is dependent on an individual's aptitude.

Neuroscience involves understanding brain activity and behaviour. It is a way of studying human emotions and cognition in terms of responses to certain stimuli. Electroencephalography is a neuroscience method based on understanding changes in electric activity. It offers a way to analyse how electromagnetic activity influences behaviour, thereby tracking brain waves over time based on environmental situations. It is relatively easy to use and low cost compared to other neuroscience approaches. The downside is that it can be intrusive and restricted to surface levels of brain activity. Functional magnetic resonance imaging, typically shortened to MRI testing, is a more sophisticated and newer approach to neuroscience. It can be expensive to use due to a need for a machine to test this activity. MRI is a technique used to understand the spatial resolution of the brain and can result in detailed activity. Despite medical ways to understand neuroscience and intelligence functions, there are many unknowns about how the human brain works.

Artificial intelligence

Artificial intelligence is reshaping business activities by taking a transformative point of view and is increasingly important to family businesses. It is a branch of computer science that involves the use of a range of technologies including expert systems, neural networks and robotics. It can be used in most industries but often occurs in the banking, education and manufacturing sectors. Artificial intelligence can be used to integrate data from various sources in order to understand its meaning. Most artificial intelligence applications involve the use of data, so it is important to understand how it can solve problems. Giuggioli *et al*. (2024, p. 2) define artificial intelligence in terms of digital capabilities as "the examination of how digital computers and algorithms perform complex processes that normally require or exceed human intelligence". In today's global competitive marketplace there is a need for family businesses to respond in an entrepreneurial manner. Artificial intelligence promises ways to do this by enabling more efficient decisions aided by human thought as it utilises machines that are trained on data in order to perform tasks like humans (Ratten and Jones, 2023). It can include supervised, unsupervised and reinforcement learning techniques instead of explicit programming.

Artificial intelligence is based on machine learning that utilises algorithms. The idea behind machine learning is to utilise patterns to predict things. This means a machine learns from experience to analyse possible situations. Machine learning enhances the way artificial intelligence provides insights for human decisions. Thus, some definitions of artificial intelligence emphasise machine learning such as Shepherd and Majchrzak (2022, p. 1),

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who define artificial intelligence as “machines that are trained to perform tasks associated with human intelligence, interpret external data, learn from that external data and use that learning to flexibly adapt to tasks to achieve specific outcomes”. This has resulted in modern artificial intelligence being defined as “the newly accessible, advanced research techniques facilitated by recent major advances in computer power, big data, and computer science” (Lévesque *et al.*, 2022, p. 804). Family businesses are incorporating modern artificial intelligence in order to increase their competitiveness in the global business environment.

Artificial intelligence can enhance the effectiveness of an entrepreneur by helping them make better decisions (Ratten *et al*., 2024). Alan Turing was one of the pioneers of modern-day artificial intelligence. He devised the Turing test to determine if machines could think and is credited with providing a more contemporary approach as to how artificial intelligence exists in society. In the 1940s and 1950s, large computers were built for artificial intelligence purposes but mainly focused on numerical problems such as solving codes.

Artificial intelligence technology has rapidly changed in the past few years due to innovative usage of computing platforms. This means it is increasingly being used in various contexts for a variety of tasks. Artificial intelligence offers a way for entrepreneurs to apply in an innovative way business concepts using computing technology. It can stimulate new business by changing the way business is done. Current artificial intelligence technologies enable big data to be collected and then analysed to derive inferences. This can include information from consumers, tweets and blogs.

Social intelligence

Social intelligence is based on reasoning which is similar to other forms of intelligence. Thorndike and Stein (1937, p. 275) defined social intelligence as “the ability to understand and manage people”. Traditionally emotional intelligence was part of social intelligence, as it relied on an individual’s ability to manage oneself and others. The ability to act wisely in human relationships is at the core of social intelligence. It enables the behaviours and motivations of others to be understood on the basis of this information; a person can then alter their own behaviour.

In family businesses, social intelligence is particularly important due to the existence of familial relationships. This means often a family business functions in a different way to other types of businesses due to the social networks in existence. As a result, there can be a lot of knowledge in terms of social interactions inherent in a family business that influence how it interacts with others. Rather than just relying on profit maximisation, a family business may also consider social relationships that can change over time. This can provide better overall outcomes, as the marketplace often shifts based on demand.

Emotional intelligence

Emotional intelligence is defined as “a set of skills hypothesised to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan and achieve in one’s life” (Salovey and Mayer, 1990, p. 185). Emotional intelligence can be considered a different form of intelligence that emphasises the ability to read emotions. It can be viewed as being similar to social intelligence and intellectual intelligence but emphasises the role of emotions in society.

Emotional intelligence involves the appraisal of verbal and non-verbal forms of emotions to understand their meaning. This enables a person to analyse emotions as a way of helping guide future actions. The processing of emotions can be complex depending on the nature of the feeling. This means the emotional competence to analyse feelings is difficult. To guide one’s own behaviour and emotions, they need to be labelled in terms of feelings. This can include associating emotions with different kinds of needs, such as being happy or sad. Interpersonal knowledge about emotions relates to sets of feelings.

Emotional intelligence involves the manipulation of emotions based on the content of behaviour. This includes rapidly analysing emotion-related behaviour in terms of its relevance. By effectively analysing emotions, they can change their behaviour. Emotions can change based on events. This means positive moods generally result in good behaviours and negative moods lead to bad behaviour. Emotional swings can assist in changing behaviour but can be difficult to regulate.

Emotions coordinate a person's conscious awareness of a situation. They arise in different formats based on physiological responses. Emotions convey meanings about contexts that can change over time. Emotional intelligence involves assimilating emotion-related feelings. It is useful to identify how emotions are associated with a story, as it enables better evaluation of problems. This means focusing on individual functioning in society based on perceiving emotions.

In conclusion, this editorial has emphasised the main types of intelligence evident in family businesses. As technology continues to evolve and artificial intelligence becomes more used in family businesses, it is important to understand the meaning of intelligence. This will help to include social and emotional forms of intelligence within family business management.

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