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Human Performance Engineering

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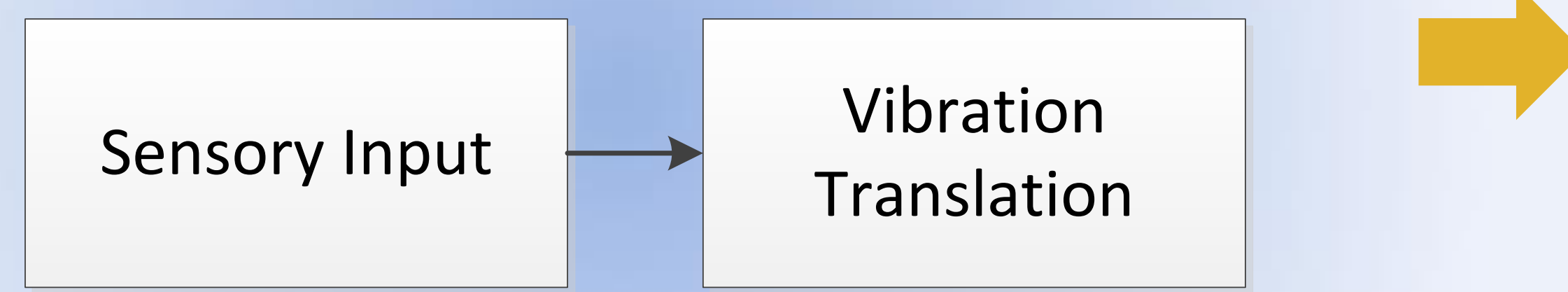
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Human Performance Engineering

Ph.D Dotan Shvorin & Dr. Kevin Taaffe

Identification System

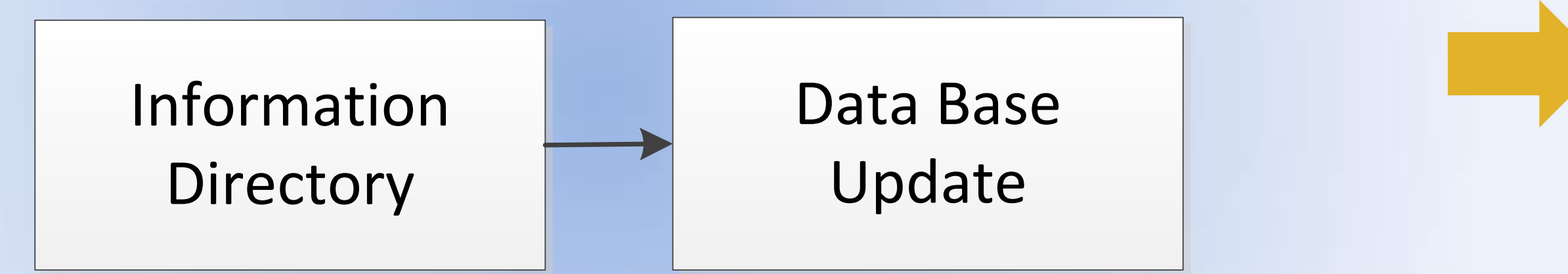
M. Matthen, Seeing, Doing, and Knowing: A Philosophical Theory of Sense Perception Oxford: Clarendon Press, 2005.



Our body's external and internal sensors are providing signals (40 billion), which are being translated in our brain (CPU).

Classification System

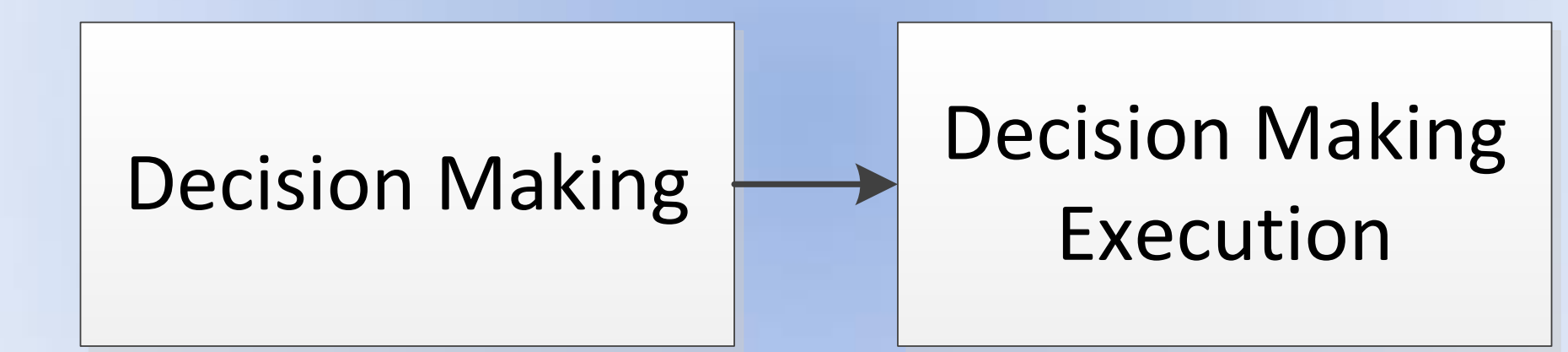
L. F. Schlecht, Classifying Fallacies Logically, Teaching Philosophy, 14:1, March 1991



Upon receiving sensory input, our brain creates an information directory and clusters groups of data with similar characteristics.

Comprehension System

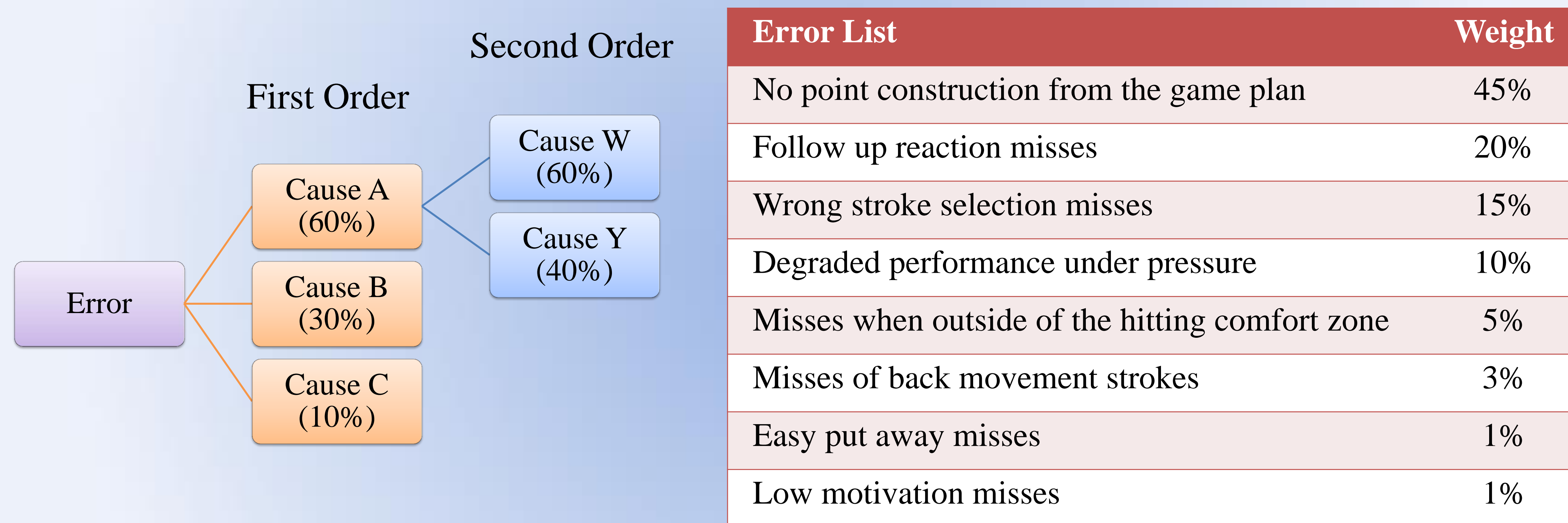
D. T. Quzts, M. J. Palombo, Case Method in a Graduate Children's Literature Course to Foster Critical Thinking: Picture Books and the QAR, SPRIN(J 2005, Val. XXIV, NO. 3



With a goal in mind, we follow a course of action, which was developed from logical reasoning.

Cause and Effect in Sports Performance Errors

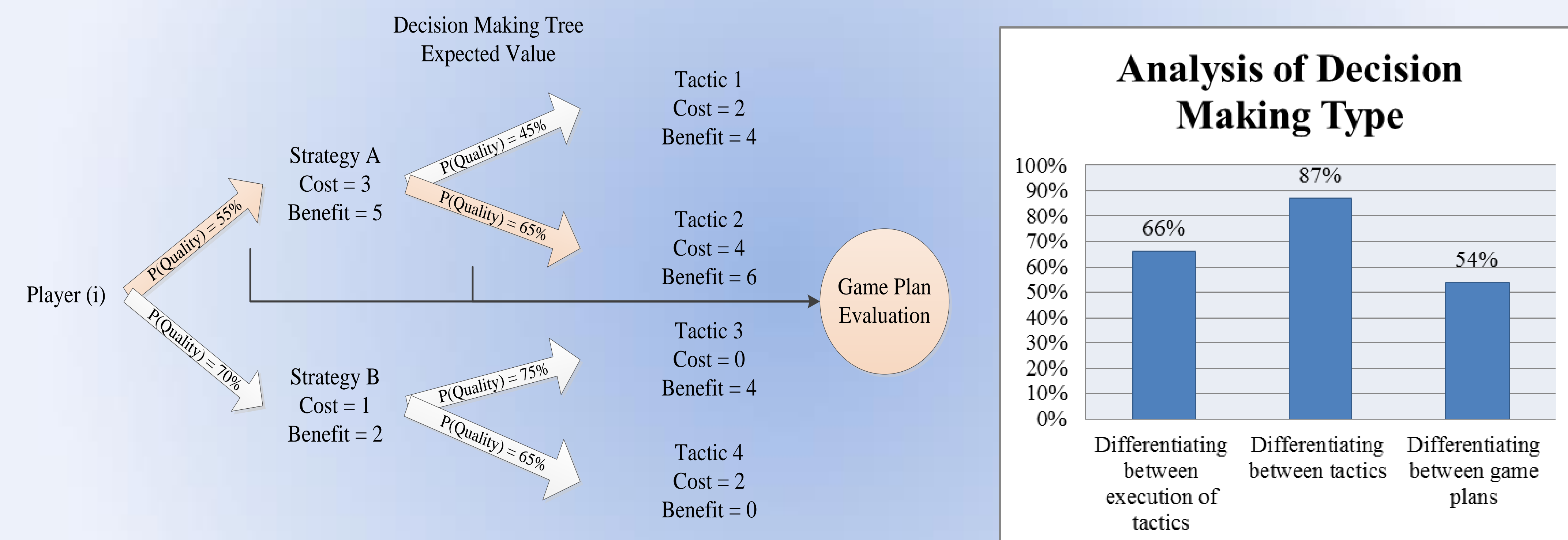
Shvorin, D. and Taaffe, K.(2014) 'Improving tennis player performance using system development interpretations methodology', *Int. J. Quality Engineering and Technology*, Vol. 4, No. 3, pp.225-242.



System Development Interpretations (SDI) methodology is a quality tool designed to identify and map the causes that contribute to defect creation in a manufacturing system. We extended its use into the setting of professional sports in order to understand how defects / errors are being created in the system.

Game Theory Approach

Shvorin, D. and Taaffe, K.(2015) 'Evaluating the player's decision-making capabilities in the sport recruitment process', to be submitted.



The integration of game theory and quality engineering techniques lead to the design of a recruitment evaluation for specific player positions in sports. We examine the player decision-making capabilities given a certain game scenario.

Performance Characteristics Quantification, Analysis & Design of Experiments (Current Research – CI)

The **Agility cycle** represents a sequential development of a few performance characteristics that can be quantified and measured. The cycle begins and ends with **awareness** which expresses our ability to integrate information to our system. Given relevant information, we make a **prediction** that could be based on pre-knowledge or artificial knowledge. When a **decision** is made, we **prepare** ourselves to act and follow through. The **execution** demonstrates our ability to integrate each step in the process in order to achieve the expected result.

