

UNICON: ABT Blog Article: Reading time 5-6 mins

Algorithmic Business Thinking: A Suitcase for Digital Destinations.

Today, when creating the teams, organizations, and societies of tomorrow we invariably look in the direction of technology to lend us a hand. Our visions, strategies and operations are being reshaped by the code, data and algorithms running on our smart phones, tablets, and computers.

As Executive Education practitioners, we're increasingly guiding leadership teams across a technology chessboard with teaching and learning interventions that evolve how organizations think and act in the digital economy.

In this article, we'll explore how Algorithmic Business Thinking, a concept created I've created at MIT Sloan School of Management, enables us to create a common ground between computer science and business science where Executive Education can help organizations convert key challenges posed by digital transformation into opportunities for sustainable growth.

Marvin Minsky, the AI pioneer, and MIT Professor, coined the term 'suitcase word' for concepts that hold several things inside and have to be unpacked to get a clear sense of their meaning. This is a good way to visualize Algorithmic Business Thinking, or ABT, as we'll refer to it here, as a suitcase packed with a toolkit, mindset, and digital language that we can use in Executive Education with our clients.

ABT's central theme is one of consilience, it's a vehicle for driving unity and unification, inside and outside of our organizations. It isn't about algorithms per se, instead it's a way of thinking about their use in our teams, companies, and communities. Its message of consilience not only aims to unify computer science with business science but also to unite human resources with machine capabilities in our teams and organisations. It provides an opportunity to unite our industrial yesterdays with increasingly digital tomorrows, here and now in the present. By reducing the difference in pH level between the inside of our organizations and the outside world, ABT improves the osmotic flow of ideas, innovation, identity, and intelligence (whether individual, collective, or artificial) between them.

ABT's suitcase, packed with its digital toolkit, mindset and digital language reduces the noise of digital disorder and disruption and amplifies signal to improve problem solving and decision making. It invites, perhaps even compels, us to walk towards complex challenges, rather than away from them, with an improved capability and confidence. ABT helps us to better frame our challenges, such that we can break them down into smaller and simpler parts, work on them in parallel and then put them back together as opportunities for sustainable organizational growth.

As we open and look inside our ABT suitcase, the first thing we'll find is a practical and easy to use toolkit consisting of frameworks and models designed to help craft and sculpt the futures we and our clients want for their organizations. Next, we'll briefly introduce two examples of ABT toolkit models and share what jobs they've been designed to do for us.

Firstly, let's unpack ABT's, '4 Cornerstone Framework'. ABT is a construct built upon four key cornerstones of computational thinking. The first, 'Decomposition', invites us to break complex problems down into a series of smaller questions until we arrive at a problem we can fix, and then

work on next problems. We do this with the help of the second cornerstone, 'Pattern Recognition' where we take patterns of success (or failure) from one area, and re-use them to help answer questions in another. Then, we apply 'Abstraction' to separate signal from noise so we can focus on what's important by removing the data and information that distract our focus. Finally, having applied our first three ABT cornerstones, we build 'Algorithms' that are our step by step set of instructions to frame and fix our problem.

The critical point with ABT Algorithms, however, is that they aren't just computer programs or code, but rather humans and machines working together as trusted colleagues in evolving new partnerships that recalibrate the roles, responsibilities and relationships of both humans and machines in our teams, organizations and more broadly in society.

ABT's 4 Cornerstones ask us to explore and engage with complex business challenges in ways that enable us to make the most of our human resources and machine capabilities and optimise their integration.

Secondly, a next model or tool we'll find in our ABT suitcase is our 'Periodic Table of Digital and Human Elements'. Back in 1869 when Dmitri Mendeleev published his first version of what ultimately became known as the 'Periodic Table of the Elements', the result was an orderly way of looking at the linkages that lie among the various chemical elements, from Hydrogen, element number one, to Oganesson, element number 118.

Today, with the 'ABT Periodic Table of Digital & Human Elements', we're looking to do for the digital economy and its organizations what Mendeleev's Table did for the world of Chemistry, that is to uncover the key relationships between its elements, apply order and enable innovation.

The 'job' of our ABT Periodic Table is to enable what we call, 'Compound Innovation' where combinations of technology are held together in robust, sustainable molecules by human elements such as creativity, curiosity, and compassion. Without the 'ionic bonds' formed by these human elements, we'll never get close to realising the potential of technologies such as Artificial Intelligence, Virtual Reality or Robotics.

Nestled beside ABT's toolkit in our suitcase, we find a digital mindset that underpins its leadership and management approaches. ABT promotes an extension of the transition we've seen from command-and-control type hierarchical structures to ones that are more decentralised and built upon collaboration and co-operation. However, ABT implores us to move further past these decentralized methods and embrace exploration. Each day we need to explore new possibilities, to identify their patterns to discover and uncover opportunities we can use in our companies to create the futures we want rather than futures we think we need or are prepared to inherit from our industrial past, or competition.

There may even be a paradox at the heart of ABT, one that recognises where we are today with technology, how we got here, and where we are heading. The ABT paradox simply states that, 'the sustainable and profitable companies of the digital economy will be increasingly reliant upon human-centred capabilities, rather than technology-centred ones'. It is trying to warn us that if we build our organizations upon silicon based digital technologies and capabilities alone, we'll quite literally be building our futures upon pillars of sand and instead that we need a human led approach to maximize our technology ROI and to harness more of its potential.

This human led ABT approach leads us to a concept of digital language that you'll also find packed into our ABT suitcase alongside its digital toolkit and mindset. It's a language model based on an organizational need to move from reading and writing technology, to speaking it inside and outside of



our companies. It's a digital language with the potential to improve the flow of knowledge and empathy inside companies, but also within the broader physical and digital networks we all operate within today.

We can become translators in our companies, increasingly capable and confident to establish a common ground between computer science and business science, between our human and machine interfaces, and the two worlds we all operate in today, the physical and the digital.

To improve fluency in this new digital language, we will need to better engineer connections, communication, and collaboration between technology and non-technology roles, functions, and centres in our organizations, between our digital natives and reborn digitals. We'll need to de-silo our organizational designs and networks. By becoming better listeners and working to reduce insecurities attached to learning and using a new vocabulary, syntax, and semantics we will be better prepared to embrace those with a different organizational dialect and accent than our own. As we communicate and listen more effectively across our organizations, we will find that technical colleagues who are looking to better speak the language of business, as well as business colleagues looking to better speak the language of technology, have in fact much more in common than separates them. By unifying and uniting our workforce we will be better positioned to understand, interpret, and act upon the requirements of our existing, and emerging audiences, customers, and markets.

For all of us working in Executive Education, our ABT suitcase packed with its toolkit, mindset, and digital language, will help equip us for the journeys we accompany organizations on over the next period. As their trusted advisers, we aren't only guiding leadership teams to their new digital destinations, but also preparing them to take advantage of the opportunities for competitive differentiation they'll encounter along the way and when they get there. We hope you find the ABT suitcase a practical and useful companion.

For more information on Algorithmic Business Thinking please visit: [Accelerating Digital Transformation with Algorithmic Business Thinking | MIT](#) or contact Paul directly at: mcdonagh@mit.edu