



Irish Medtech
Association
Ibec



On the CUSP of Excellence

Building purposeful systems
that will stand the test of time

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in partnership with Ibec and
the Irish Medtech Association

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Contents

Introduction 3

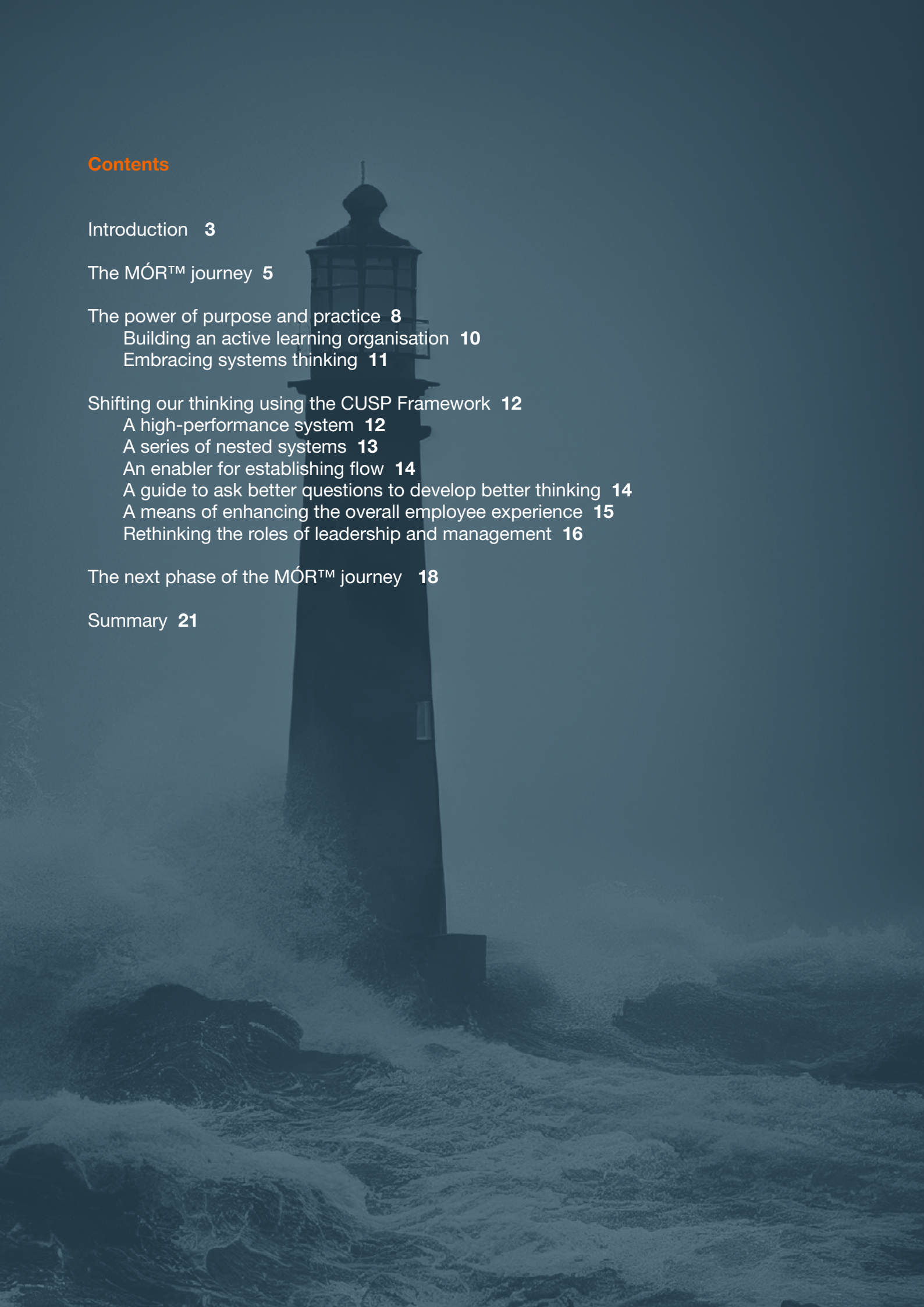
The MÓR™ journey 5

The power of purpose and practice 8
Building an active learning organisation 10
Embracing systems thinking 11

Shifting our thinking using the CUSP Framework 12
A high-performance system 12
A series of nested systems 13
An enabler for establishing flow 14
A guide to ask better questions to develop better thinking 14
A means of enhancing the overall employee experience 15
Rethinking the roles of leadership and management 16

The next phase of the MÓR™ journey 18

Summary 21



Introduction

The disruptive force of technology and rapid growth of new companies is killing off established companies earlier and at a much faster rate than decades ago. Disruption is nothing new but that the speed, complexity, and global nature of it is accelerating. The average lifespan of a company listed in the S&P 500 index was 60 years in 1958, 35 years in 1970, and now just 15 years today based on a recent study by McKinsey.¹

It is perhaps unsurprising that the country where people live the longest is also home to some of the oldest companies in the world. In Japan, there are more than 20,000 companies that are more than 100 years old. Professor Makoto Kanda of Meiji Gakuin University in Tokyo has been studying the shinese, or very old Japanese companies, to see if they exhibited certain unique characteristics that has enabled them to thrive over unusually long periods of time. His research pointed to three main factors ²;

1. Clarity and continuity of corporate purpose, culture and values
2. Learning systems built on relationships
3. The ability to balance tradition and innovation through gradual change

The three factors that Kanda emphasised in his work also correlate with studies from the 1980's into the success of Japan's manufacturing competitiveness in the automotive industry.³ Toyota, the second largest car manufacturer in the world and the largest Japanese company by revenue, is widely regarded as the originator of lean production. Since the late 1980's, Toyota has garnered global attention from business leaders seeking to improve the performance of their own organisations by observing and replicating best practices embedded throughout the Toyota Production System (TPS).

Despite the best efforts of companies to adopt "TPS" or "Lean", their prevailing system of management has remained relatively unchanged. Many companies on this journey continue to be confronted with problems that keep recurring, where firefighting still dominates how management spend their time, and where employees level of creativity and commitment are constrained by the current organisational structures and management behaviours.

1. Hillenbrand. P et al. McKinsey & Company [June 2019], Traditional company, new businesses: The pairing that can ensure an incumbent's survival.
2. TenHaken. V, [January 2008]. International Business & Economics Research Journal –Volume 7, Number 1, Lessons Learned From Comparing Survival Behaviors Of Very Old Japanese And American Companieswith 2021.
3. Krafcik. J.F [1988]. Sloan Management Review; 30, 1; ABI/INFORM Global pg. 41. Triumph Of The Lean Production System.

The biggest thing most people overlook about the “TPS” and other recognised systems that drive excellence is the thinking behind them. These systems are designed to challenge everyone throughout the organisation to learn and improve on a continuous basis. That’s what drives performance and drives the results. Based on the authors exposure to years of successfully guiding organisational transformations across various industry sectors, this paper presents a practical framework that focuses on the thinking, and how this thinking guides the way organisational systems operate for learning and driving high performance. The essence of this framework has its roots in systems thinking which is required more than ever before as business leaders are getting increasingly overwhelmed by the rapid pace of change, complexity, and uncertainty.



The MÓR™ journey

On many levels, 2020 was a year where we saw tremendous disruption and change, affecting nearly every aspect of our daily lives. The COVID-19 pandemic sent shock waves through the world economy and triggered the largest global economic crisis in more than a century. Inflation, geopolitical instability, and supply chain disruptions have since become the leading risks to economic growth.

Despite the challenges facing the global economy, Ireland's economy continues to thrive. What helps of course is that Ireland is strong in several key sectors that are performing stronger than most, particularly medtech and pharmaceuticals that are poised to keep growing out to 2030 at CAGR's of 5.5% and 8.5% respectively.^{4,5}

In the medtech sector alone, 14 of the world's top 15 medtech companies have operations in Ireland with over 450 companies located here. There are many reasons why Ireland has been very successful in attracting inward investment, but key to staying competitive is Ireland's global reputation for operational excellence.⁶ From 2014 to 2018, Irish based medtech companies accounted for 6 out of the 14 companies in the world to be awarded the Shingo Prize for Operational Excellence. A key contributing factor to this achievement has been the active role of the Irish Medtech Association and Irish Medtech Skillnet. Being a small country helps foster collaborative connections between companies and local universities with strong clusters in all major cities. Each cluster's close geographical proximity to one another provides a competitive advantage and ideal platform for companies to regularly meet and collaborate on areas that drive innovation and accelerate operational performance.

As part of a mid-term strategic review in 2010, the Irish Medtech Association Board and its members had a refocus on manufacturing. This resulted in the formation of a new Working Group on Operational Excellence. The Operational Excellence Working Group was made up of representation from members companies that were recognised leaders in operational excellence. The team were chartered with establishing a national programme to drive operational excellence across the sector and one year later, the MÓR™ Benchmark Model was successfully launched (MÓR meaning great in the Gaelic language and an acronym for Monitor – Optimise – Realise).



4. https://www.einnews.com/pr_news/599925140/global-pharmaceuticals-market-projected-growth-until-2030

5. Fortune Business Insights [2023]. Medical Devices: Global Market Analysis, Insights and Forecast 2023 – 2030

6. <https://www.idaireland.com/explore-your-sector/business-sectors/medtech>

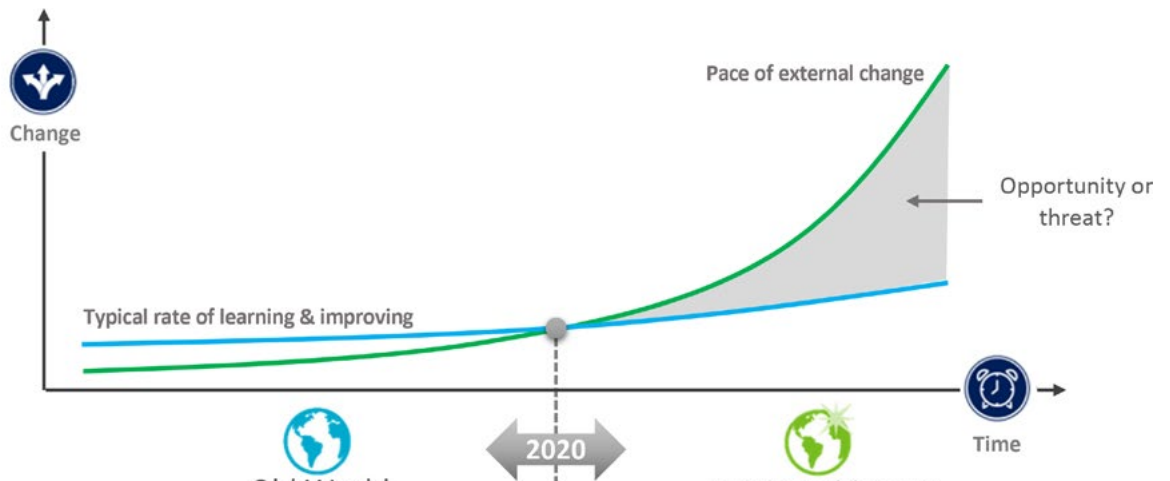
The model was used as the basis for achieving three objectives:

1. Standardise how companies assess for gaps from an operational excellence standpoint.
2. Upskill leaders through a formal and certified lean leadership program.
3. Establish partnerships for peer-to-peer lean mentoring.

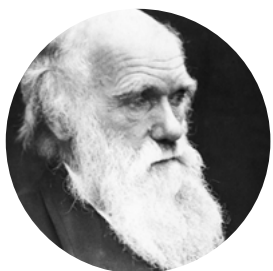
Since the MÓR™ benchmarking model was launched in 2012, over 120 medtech companies have participated in the programme, sharing their success stories at regular industry forums and the annual Medtech Rising Conference, jointly hosted by The Irish Medtech Association, IDA Ireland and Enterprise Ireland for the past 15 years.

However, today’s world is very different to where we were 10 or 15 years ago. Disruptive innovations we could not imagine back then are now commonplace, words like digitalisation are driving business strategies, sustainable practices are now more urgent than ever to combat climate change, and the rapid evolution of artificial intelligence is transforming industries and lives worldwide. As depicted in the exhibit below, the gap between the changes taking place externally and those internal to organisations is growing wider and faster. Keeping pace with the pace of external change is essential for any organisation to survive and to succeed.

Exhibit 1: Old world versus new world gap



	Old World	New World Norm
Markets	Stable & predictable	Volatile & uncertain
Middle Management	Manage and evaluate employee performance	Lead through coaching & teaching
Technology	Gradual evolution	Accelerated change with emergence of AI
Skills & Knowledge	Reliance on tenure and experience	Upskilling of critical thinking and digital dexterity
Workplace	Results based	Learning and performance based
Talent Retention	Provide competitive salaries	Provide purpose, fulfilment and experience



“ It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.”

Charles Darwin



While Irish medtech companies have had tremendous success to date, the pace of change and its emerging gap in today's world poses a real challenge to businesses in terms of how to respond. Humans have an incredible ability of being innovative and resilient, especially when confronted with uncertainty and crisis. The recent pandemic demonstrated this, as people came together and found ways of keeping supply chains operating, developed and distributed vaccines in rapid timelines, and embraced technology to stay connected. When we are clear about what is needed and care deeply about it, we always find a way to get there, despite many obstacles and setbacks along the way.

The power of purpose and practice

In the competitive world of sport and entertainment, there are many examples of individuals and teams that push themselves to such high levels of performance that even the seemingly impossible becomes a reality. Take for example Roger Bannister becoming the first human to run the mile in under four minutes in 1954 when it was perceived it was beyond human capacity to do so. More recently Eliud Kipchoge being the first human to break the two-hour barrier for the marathon in 2019.

There are many reasons why high performance is easier obtained in the world of sport and entertainment than in business. The size of teams and the levels of complexity in both settings are vastly different. However, there are two prevailing factors that companies often lack that are most evident in these high performing organisations as referenced in Kanda's research on Japanese companies:

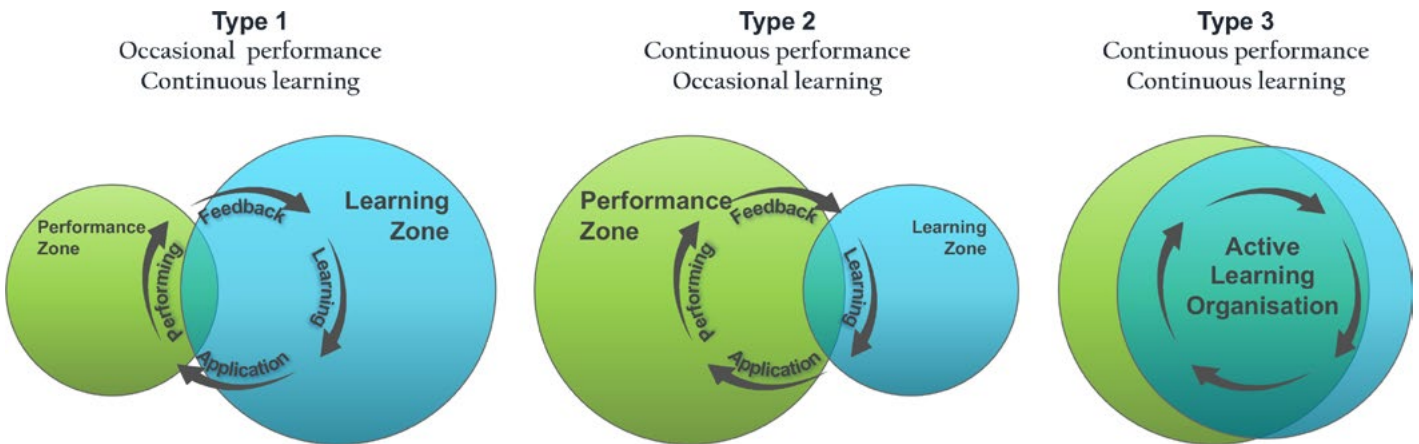
1. the connection to a meaningful and higher purpose, and
2. the discipline of doing meaningful practice.

Purpose is the reason we do things. It gives clarity and meaning to why individuals, teams and organisations all exist in contributing to a greater cause. Too often in business settings, many people show up to work each day because they feel they 'have to'. In purpose driven teams, people show up each day because they 'want to'. Profits matter in business as organisations simply can't survive without it. But without purpose, organisations can seem empty and lifeless.

When people genuinely care about something they want, they become automatically committed to it. As is often said, "We are the choices we make." Purpose should be the driving force for all our choices and actions, and people are most fulfilled when they see how their choices and actions are making a positive difference to the lives of others. The power of purpose and why it matters is strikingly reflected in this quote from the German philosopher Friedrich Nietzsche; "He who has a Why can endure any How".

Practice on the other hand is about learning and improving through guided experimentation in the pursuit of excellence. Both the quality and quantity of what we practice is important. There are three types of system configurations depicted in the exhibit below to provide more context of how practice and performance are integrated.

Exhibit 2: Types of system configurations based on the learning and performance overlaps



The first type of system configuration represents individuals and teams who only perform on occasion, but when they do, they are expected to perform to the highest of standards. In these situations, a significant amount of time is spent continuously practicing in what is known as the learning zone. Not just any kind of practice, but meaningful practice that is aimed at creating the desired results regardless of the situation. Professional sports, arts and entertainment, military special operations, and elite rescue teams are some examples of occupations where people and teams practice and perform in this type of environment.

The second type of system configuration is representative for most people who are required to continuously perform and deliver results every day when they present themselves for work. Industries that operate all-year round such as healthcare, retail, manufacturing, and so forth would typically fit this type of system. Significantly less time is afforded to peoples learning and development as the prevailing system of management is, at its core, results focused. Fostering learning without disrupting performance is a challenge for management and most often it is achieved as an “add-on” and away from the job using occasional virtual or classroom-based methods. Learning curves for people typically plateau once the essential skills needed to perform the job to the current standard have been acquired, especially for those working on the front lines. A few companies have recognised the need to develop frontline workers in basic process control and problems solving skills, and more importantly redefine their job responsibilities so they are fully empowered to practice using these skills on improving their own processes. Without these changes, quality control and process improvement will remain the responsibility of experts, not the workers themselves.

Companies that excel across all aspects of performance tend to promote and foster the third type of system configuration. The environment is designed so that performing and learning are closely integrated. Classroom learners are usually passive as the method is very reliant on listening and observation, and making mistakes is perceived as failure. Real learning on the other hand happens through experimentation, where mistakes are encouraged once lessons are learned and put into practice, repeating this cycle until the desired goal is achieved. In his book ‘The Fifth Discipline,’

Peter Senge claims that the only sustainable source of competitive advantage is your organisation's ability to learn faster than its competitors.⁷ This can be achieved when management focuses less on results and more on creating systems and fostering cultures that challenges and enables people to continually learn together, where management controls are integrated into the work itself rather than management being the control, and where people extract a greater sense of creativity, fun and meaning from their work.

Building an active learning organisation

A major reason for evolving away from the MÓR™ benchmark model is that benchmarking is aimed at only helping companies get to levels of performance that are set by those considered best-in-class. By the time it takes you to close the gap to those standards, the competition has already moved on. You remain a follower and not a leader.

Furthermore, a major limitation with benchmarking is most people tend to replicate only what they see and fail to understand how its designed to work. It's a mechanistic or linear approach to improvement. In any system, it's the parts that are most visible which is why management have a fascination with observing for best practices and implementing tools and solutions. How those parts interact with one another through their connections is much less visible and much more complex to understand. Systems thinking can be a difficult concept to grasp but is essential in helping us form a better understanding of how things work and why things behave as they do. The analogy of solving a jigsaw puzzle as depicted here can show the effects between the mechanistic approach to solving problems and the systems thinking approach.

The image on the left below demonstrates how focusing on the parts in isolation leads to many false starts and inefficiencies. Compare that with the image on the right, where the user has a much better understanding of how the parts are connected to form the whole.

Exhibit 3: Solving complex problems using systems thinking



Vs.



Mechanistic thinking

Focus on the parts
Trial and error with
many false starts

Systems thinking

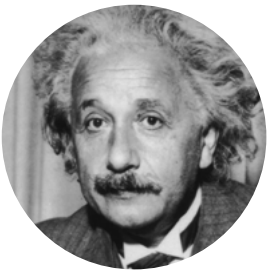
Focus on relationships
and the whole
Guided experiments with
direct feedback

7. Senge, P.M. [2006], The Fifth Discipline: The art and practice of the learning organisation.

Embracing systems thinking

We live in a world of systems and all around us are examples of “systemic problems” that have no simple one cause. Systems thinking offers a language that begins by restructuring how we think and is the cornerstone of how learning organisations think about their world. Reality is made up of circles, but we’re conditioned to see in straight lines. Our thinking is influenced by our language, and language shapes perception.⁷ What we see is a function of what we are expecting to see. Language that follows a linear model, such as cause-and-effect or input-process-output, is biased towards mechanistic thinking. If we want to see systemwide interrelationships, we also need a language of interrelationships, a language configured using circles. In the absence of such a language, our ways of seeing the world produce fragmented views and counterproductive actions.

In building a learning organisation there is no ultimate destination or end state, excellence is endless, you’re always on the cusp of change. Staying competitive requires constant movement and progression from current state to a better future state and seeing this pattern or cycle repeat over and over.



“The world as we have created it is a process of our thinking, it cannot be changed unless we change our thinking.”

Albert Einstein

Shifting our thinking using the CUSP Framework

Human beings are designed for learning. From an early age, infants learn how to walk, talk, and master spatial relationships without anyone having to teach them. Unfortunately, the primary institutions of our society are more often orientated towards controlling rather than learning.⁸ The essence of the CUSP framework as presented here is about reframing the role of leadership in organisations to enable people continually learn and expand their capacity to produce the results they truly desire.

A high-performance system

The framework consists of five primary system elements that are all closely interconnected and held together by the flow of information as depicted by the arrows and connecting pieces. The elements are configured in a deliberate circular structure to reflect the iterative closed-loop PDCA cycle of learning and improvement. The least obvious element of the system, its function or purpose, is perhaps the most crucial determinant of the systems behaviour and that's where every cycle starts to ensure the directional alignment of all other elements. The cycle revolves around people, the most important element, as this is how the system becomes an active living system. The process element captures where and how the work is performed and value is created. The purpose of the performance element is to evaluate the systems effectiveness and provide timely and accurate feedback to stimulate learning and action. Based on this feedback, the practice element determines if action is needed, and what those actions are, in order to grow people and grow the organisation.

8. <https://sloanreview.mit.edu/article/the-leaders-new-work-building-learning-organizations/>

Exhibit 4: The CUSP framework - Customer focused and People centric



The basic thinking throughout the CUSP framework also illustrates the types of activity that takes place along its vertical and horizontal planes. The requirement to bring closer together the performance and learning activities into an active learning environment are highlighted in the vertical planes. The horizontal planes articulate the organisations why, how and what that correspond to the relationships between the strategy, execution and results.

A series of nested systems

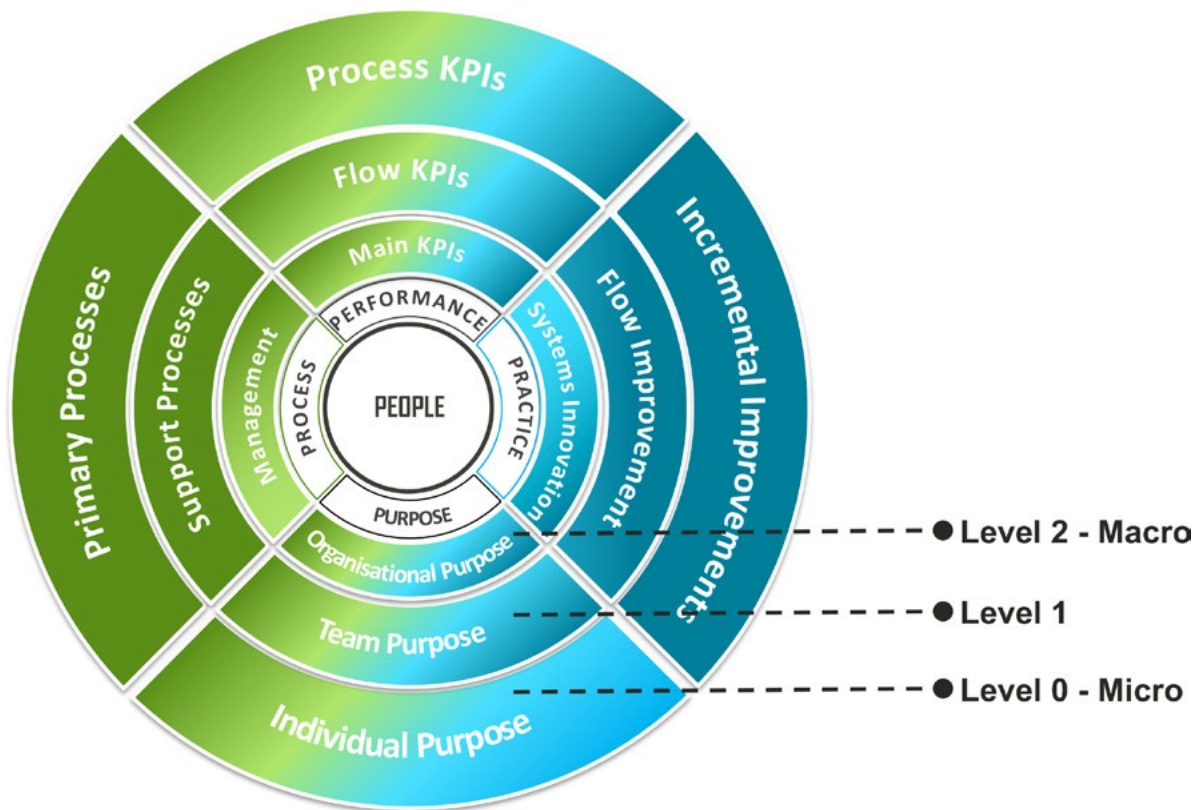
The same thinking that is implied in the basic CUSP framework applies to systems and organisations that function at micro and macro levels. The only contrasting feature is the scope expands and contracts depending on what level you are focusing on.



“ The key to ‘the Toyota Way’ and what makes Toyota stand out is not any of the individual elements – but what is important is having all the elements together as a system. It must be practiced every day in a very consistent manner, not in spurts.”

Taiichi Ohno

Exhibit 5: CUSP framework depicted as a series of nested systems



An enabler for establishing flow

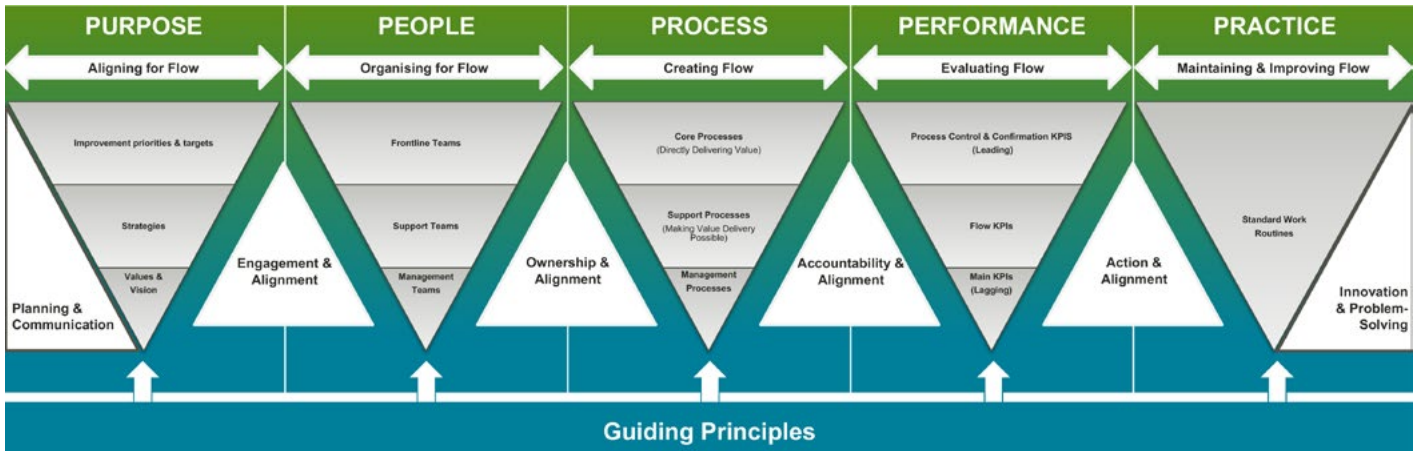
An alternative perspective of this nested configuration is to flatten out each of the elements into a series of layers to emphasize “flow”. The ultimate state of high performance is often described as a state of flow. That’s when all parts of a system are performing in harmony with one another. A concert orchestra is one example of this. When flow stops or is interrupted, delays occur, costs spiral, and customers ultimately bear the brunt of the effects. Underneath each of the elements of the CUSP framework is a set of guiding principles that enable leaders align and configure all the key parts of their systems to support the realisation of flow.

A guide to ask better questions to develop better thinking

When we observe and ask a new question, the mind starts to explore information in a more divergent way. Open questions are purposeful when they begin with the “why, how and what” to actively invite explanations. Extensive research and studies show that the ‘pull-based’ method of Socratic questioning (coaching as opposed to traditional ‘push-based’ methods such as telling) lead to more durable learning and improvement over time. For example, managers don’t tell their team members how to do their work. Instead, they facilitate team members to discover for themselves how a system works and where improvements can be made.

Moving clockwise and anti-clockwise, the CUSP framework provides a simple guide for asking more meaningful and precise questions of ones-self and one-another to facilitate better thinking and better outcomes. For example, we start to explore the purpose of a system initially by asking “why does this system exist? Does everyone understand its purpose? Are they committed to it?”.

Exhibit 6: CUSP framework – enabling flow



Next, we can explore the processes by asking “How do they align to their purpose? How clear is the process to follow? Who is responsible for the process?”. Systematically, we move onto performance to explore “what is it we should be measuring? What is working and not working?” and so forth. The number of questions we can generate are limitless but what is more important is to isolate the precise ones that will be most purposeful and helps teams grasp a better understanding of the situation.

A means of enhancing the overall employee experience

The people that are best positioned to manage and improve the processes are the same people who work on them every day. In many organisations, management tend to separate the people that do the work (frontline workers) from the people made responsible for managing and improving the work (engineers, managers, etc.). In command-and-control organisations, people are robbed of autonomy with a predictable adverse impact on their motivation, the feeling of being reduced to “a pair of hands”.

When management engages everyone around purpose, empowers everyone to take full ownership for their processes and call for support when needed, and develops the analytical and creative capabilities of teams in making improvements, an inclusive culture emerges that drives discipline and accountability, through greater role clarity and more effective team collaboration.



“The most valuable “currency” of any organisation is the initiative and creativity of its members. Every leader has the solemn moral responsibility to develop these to the maximum in all his/her people. This is the leader’s highest priority.”

W. Edwards Deming

Exhibit 7: Systems and cultures are interdependent



Rethinking the Roles of Leadership and Management

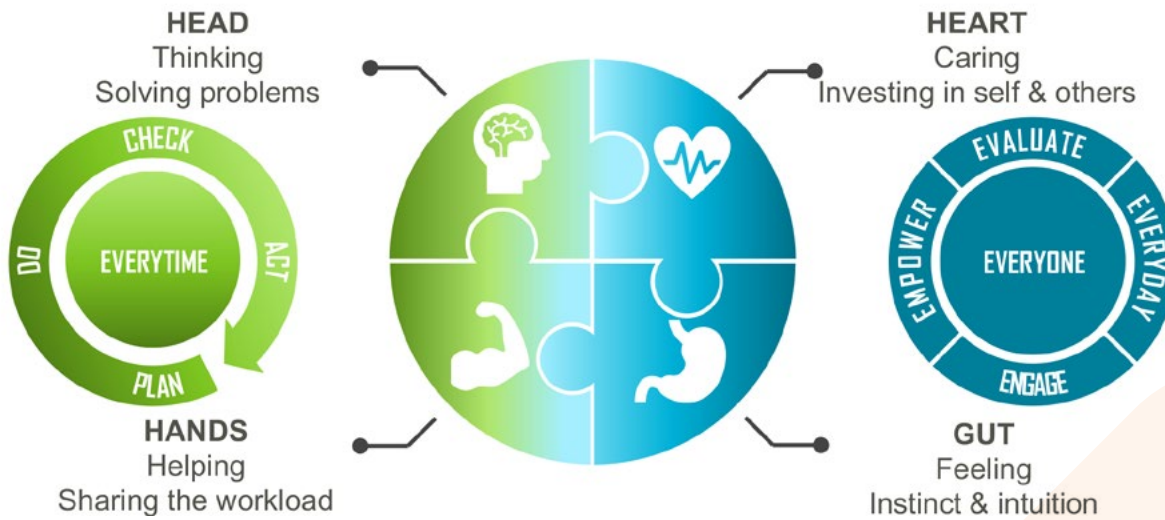
The conventional perception of managers and leaders is they are two different roles, managers ensuring people do things right, leaders ensuring people do the right things. Managers manage problems and people (head / hands) and leaders lead with empathy (heart) and intuition (gut). The words “manager” and “leader” have come to refer largely to positional authority and that only those in a position of power can manage and bring about change. Again, this is the application of mechanistic thinking where the focus is on parts and functions, and not the whole system.

The essence of the learning organisation is that everyone is empowered and responsible for managing their work and leading change at the appropriate level. Managers and leaders should not be granted the title based on positional authority, it’s a responsibility that is earned through one’s behaviours and actions. Leaders of customer-focused and people-centric companies understand that it’s people who make their company successful. These companies realise that when people feel valued and cared for, they do their work with stronger intrinsic motivation, a deeper sense of meaning, and a greater level of commitment. They go the extra mile simply because they want to contribute to an organization that cares about them.

Exhibit 8: Inseparable nature of leadership and management

MANAGEMENT + LEADERSHIP

Doing the right things right



The next phase of the MÓR™ journey

The intent behind the original version of the MÓR™ programme was to support companies grow and compete through the adoption of recognised lean practices. In the new world, that intent remains the same but the approach has changed. The prevailing gap between the pace of change externally versus internally has to be grasped as an opportunity to remain competitive.

The next phase of the MÓR™ journey is framed around a hub and spoke model. Each one of the spokes represents a service offering designed to meet the emerging needs of companies that are braced for transformation in any of the four areas as illustrated below. The spokes are fluid and will change and evolve as technology advances and new trends emerge that companies must comply with. The hub however, will remain constant as it is centered on helping companies along a lifelong journey to becoming an active learning organisation. The hub is centered on the CUSP framework, as presented in this paper. Regardless of whatever disruptive trends emerge over future years, the principles and essence of the CUSP framework will not only remain constant, they will be remain more relevant than ever. For companies to not just survive but also to thrive, being customer focused, people centric, and having the capability to learn and adapt faster are essential requirements.

Exhibit 9: MÓR™ Enterprise Excellence



Relevant for then
Fixed approach
Benchmarking-centred
Adoption of best practices
Emphasis on tools and techniques



Relevant regardless
Adaptable approach
Purpose-driven
Shift of mindset and thinking
Emphasis on organisational learning



Summary

In building learning organisations there is no ultimate destination or end state, only a lifelong journey to pursuing excellence. This work requires great reserves of patience and commitment but the results that will be achieved will be more sustainable, as the systems and culture responsible will stand up to the forces of nature and test of time.

Heavily engineered organisations are an achievement we can be proud of in terms of consistent productivity; however, they can encourage mechanistic thinking that has significant limitations on fostering growth and creativity. Organisations and leaders who embrace a more holistic, systems-based approach can significantly enhance performance and meet the challenges of disruption and stagnation through more people-centric learning organisations.

There are many examples today of systems that evolved to both stand the test of time and even get ahead of change. Human capability is innate but not always expressed. When effort is purposeful, we can all draw inspiration from and apply this to our own lives and organisations. The people that built the great cathedrals, pyramids and lighthouses that we marvel at today knew they would not be around to see their completion, but this did not deter them from their efforts. They understood the meaningfulness of the work they did which was not about laying bricks or building objects, but instead constructing a system that serves future generations and contributes to a greater cause.

About the author

Cathal O'Reilly has over 25 years industry experience in positions spanning the end to end supply chain with companies such as Boston Scientific, DePuy Synthes, Johnson and Johnson, and most recently Teleflex. During this time, Cathal has been at the forefront of driving transformation through Enterprise Excellence, leading teams to deliver breakthrough results and achieve best-in-class levels of performance.

Cathal has been an active promoter of Enterprise Excellence throughout the medical technology sector in Ireland and helped establish the MÓR™ benchmark model which was successfully launched through the Irish Medtech Association in 2012. He also serves as a high performance coach to numerous individuals and teams across sport in Ireland and actively competes in distance running events.





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The Irish Medtech Association is the business association within Ibec representing the medical technology sector. The Irish Medtech Association has more than 250 members, located throughout the island of Ireland. The group's broad focus is to promote and support an environment that encourages the sustainable development and profitable growth of our FDI multinational and SME member companies. The Irish Medtech Association is led by a Board of CEOs and Chief Representatives, it implements its strategy through working groups and taskforces. We also deliver training and upskilling for the MedTech and Engineering businesses in Ireland through our Apprenticeship and Springboard programmes and our Skillnets Networks.

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Taighde, Nuálaíochta agus Eolaíochta
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