Revisiting organisational strategic management (5)

Accelerating global and local VUCA-related disruptors as drivers for organisational strategic responses[1]

Alan Stretton

INTRODUCTION

This is the fifth of a series of articles which revisit some aspects of organisational strategic management about which I have written in the past. The first article of this series (Stretton 2020l) proposed a six-stage recursive strategic management sequence, and discussed managerial arrangements to help coordinate and optimise the stages in this model. The second article (Stretton 2020m) discussed augmenting this model to facilitate management of changes impacting planned strategic initiative outcomes and the realisation of benefits.

The third article (Stretton 2021a) introduced deliberate and emergent strategies, and moved on to assemble and classify a variety of strategic drivers which particularly influence the establishment of strategic objectives. The fourth article (Stretton 2021b) incorporated the internal and external strategic drivers identified above into the recursive strategic management model, and discussed some differences between industries in the nature and priorities typically accorded to strategic drivers.

This article will continue with the strategic driver theme. We will briefly revisit some potential global disruptive events discussed by Pells 2009b, and previously listed in Figure 3-9 in Stretton 2021a, alongside a list of key external strategic drivers derived from Pells' list and another source.

We will then discuss contributions from Hubbard & Rogers 2019, who identify some 38 disruptors in the context of accelerating VUCA (Volatile, Uncertain, Complex, Ambiguous) environments in the 4th Industrial Revolution (Industry 4.0) era – many of which are particularly relevance to the Covid-19 era. These will be broadly allocated under the key external strategic drivers headings previously established.

We will also be drawing on Hubbard & Rogers' quite detailed organisational management responses to challenges associated with these disruptive strategic drivers.

We start with briefly revisiting Pells' potential disruptive global events.

[1] How to cite this paper: Stretton, A. (2021). Accelerating global and local VUCA-related disruptors as drivers for organisational strategic responses; Revisiting organisational strategic management (5), series article; *PM World Journal*, Volume X, Issue IV, April.

REVISITING PELLS' POTENTIAL DISRUPTIVE EVENTS

As noted first in Stretton 2021a, David Pells has written several papers over the past couple of decades on "Global tides of change" (Pells 1998), "Significant global events" (Pells 1999), "Global business intelligence" gathering (Pells 2009a), and preparing for "Disruptive events" (Pells 2009b). In the latter paper Pells discussed disruptive events as a major risk factor, and poses questions about "how can you identify potential disruptive events and how should you, your team or your organisation prepare?" He went on to list and discuss nine categories for considering potential disruptive events.

In Stretton 2021a, these were broadly aligned with a list of key external strategic drivers, as summarised in Figure 5-1.

KEY EXTERNAL STRATEGIC DRIVERS	Pells 2009b: DISRUPTIVE EVENTS – CATEGORIES FOR CONSIDERATION
Technological drivers	New technology – technological development
Economic drivers	Significant economic events
Social/health drivers	Human health and social factors
Political drivers	International geo-political changes Disruptive governmental or political changes
Environmental drivers	Extreme weather and natural disasters Manmade disasters or disruptions
Regulatory & legal drivers	Legal and regulatory changes
Industry & market drivers	Industry or market changes or disruptions
Other external drivers	

Figure 5-1: Pells' nine disruptive events, broadly aligned with key external strategic drivers

We will now turn to Hubbard & Rogers' *Disruptors as drivers of VUCA and change.*

INDUSTRY 4.0, DISRUPTORS, AND ORGANISATIONAL STRATEGIES

Industry 4.0 – The 4th Industrial Revolution

The descriptors *Industry 4.0* and *The 4th Industrial Revolution* are used by Hubbard & Rogers 2019 to refer to "the current trend of extensive automation and data exchange in communications, manufacturing, production, and services, and the increasing miniaturisation of technology". Writing before Covid-19, they say,

> The 4th Industrial Revolution is entering its exponential-change phase which is accelerating the VUCA forces that business, portfolio, program, and project leadership must address. This has created the VUCA-*Accelerated* (VUCA*A*) business conditions within today's marketplace.

Industry 4.0-related disruptions

Hubbard & Rogers introduce discussions of Industry 4.4-related disruptions along the following lines.

> Leaders in most industries are finally becoming aware of the emerging technologies that will drive disruptions within their marketplace. …..
>
> Moreover, major disruptions are happening in almost every industry in every country, and no enterprise is too big to fail.

Disruptions are caused by disruptors, which Hubbard & Rogers discuss in the contexts of business disruptors, and VUCA-related disruptors.

Disruptors – Business and VUCA-related

> These business disruptors are keeping project and business management operations in flux and demand timely, proactive, agile and adaptive responses.

The authors then go on to identify and briefly discuss 38 such disruptors, introduced as follows.

> A few easily identifiable disruptors, that are drivers for transformational change, can be viewed as world-wide forces driving the VUCA conditions and transformational changes within businesses, and require leadership attention by operational and project management. Some of these conditions and changes, …, include ….

They then identify and briefly describe 38 VUCA-related disruptors. These will be listed a little later in Figure 5-1 below.

But we first discuss the specific connections Hubbard & Rogers make between VUCA-related disruptors and organisational strategies.

Organisational strategies, and VUCA-related disruptors as strategic drivers

Hubbard & Rogers specifically connect VUCA-related disruptors with organisational strategies in several places, as exampled in the following quotation.

> This pervasiveness of rapid technological and cultural changes, digital work, and focus on customer value, has made it necessary to transform (change) how strategies are developed, decisions are made, and projects are accomplished.

Hubbard & Rogers present disruptors as major contributors to VUCA conditions. But, in the context of the need to modify VUCA-related strategies appropriately, we can also represent such VUCA-related disruptors as the relevant strategic drivers, because that is the role they play in the consequent modification of organisational strategies.

The above then links in with the discussions on strategic drivers in the previous two articles of this series. This article can then be seen as an extension of these, not only in relation to VUCA environments, but also in the context of what I am calling accelerated VUCA-related situations, including many which are Covid-19-relevant.

We continue by first looking in a little more detail at the nature of VUCA.

DESCRIPTORS OF THE VUCA COMPONENTS

The VUCA acronym is widely used, but often not well defined. Hubbard & Rogers have given the following descriptions of general characteristics of the VUCA components (adapted from their Figure 2).

Volatility

- Situations/events/changes are unexpected, may be relatively unstable, and/or may be of unknown duration.
- Changes are frequent and may be unpredictable.
- Situations/events may be understandable with the relevant information then available.
- Numbers of possible actions/decisions are constantly changing in relationship to the stability and/or duration of situations/events.

Uncertainty

- Situations/events underlying causes and probable effects are generally known – or are unknowns that can become known.
- Basic lack of relevant information related to the situations/events causing lack of clarity.
- Nature or volume of any information may be inadequate to successfully process.
- Unknown whether situations/events will drive changes or produce ramifications

Complexity

- Situations/events are composed of multiple, and possibly some interconnected, parts, and variables.
- Limited relevant information is available, but some can be assumed/predicted.
- Overall volume of information available may be over-whelming, and/or the nature of it may be too intricate and/or compound, to adequately process or analyse.

Ambiguity

- Situations/events present as unknown-unknowns – no precedents exist for making predictions.
- Unclear cause and effect relationships with, or among, situations/ events.
- Available information does not clarify situations/ events and represents a lack of knowledge.
- Former ways of conducting operations no longer apply.

LINKING 38 VUCA-RELATED STRATEGIC DRIVERS WITH THE KEY EXTERNAL STRATEGIC DRIVERS IN FIGURE 5-1

The 38 VUCA-related disruptor strategic drivers discussed in Hubbard & Rogers 2019 are predominantly external to the organisation. They are allocated (in italics) under the key external strategic driver headings shown in Figure 5-1. I have also added (in normal typeface) some of the individual drivers from Pells 2009b which appear to represent particular examples under these headings.

These allocations do not claim to be precise, as some of the disruptor drivers could be allocated to more than one heading. However, the main purpose of Figure 5-2 below is to illustrate the very wide range of the contributions from Hubbard & Rogers in particular, and to suggest that these represent an extensive checklist of the types of disruptor strategic drivers that are particularly relevant to our accelerating VUCA era.

EXTERNAL STRATEGIC DRIVERS [1]

Technological drivers
Data security
Disruptive commercialised technologies
Digital transformations
5G wireless
Internet of things
Augmented (artificial) intelligence (AI)
Industrial internet of things
Artificial intelligence of things
Virtual and augmented reality
Industrial transformation
Cloud based media
Nanotechnology
Artificial neural networks
Blockchain technology
Geo-security
Electric vehicles

EXTERNAL STRATEGIC DRIVERS [2]

Economic drivers
Currency rates
Capital availability
Price of oil
Tariffs (trade imbalances)

Social/cultural/health drivers
Societal norms
Interconnected humanity,
Diversity in employee attitudes
Cultural revolution(s)
Vehicle usage

Environmental drivers
Global warming
Potable water
Extreme weather and natural disasters
Manmade disasters or disruptions

EXTERNAL STRATEGIC DRIVERS [3]

Political drivers
Political fluctuations
International geo-political changes

Legal and Regulatory drivers
Breaches of trust

Market drivers
Delocalisation of competition

Industry drivers
Workforce demographics
Global workforce
Independent contractors
Individual/group entrepreneurship
Distributed office locations
Globalisation of supply
Distributed manufacturing

Other external drivers
Professional sports operations

Figure 5-2: Allocating the Hubbard & Rogers' disruptor strategic drivers to the key external strategic drivers headings

RESPONDING TO VUCA-RELATED DISRUPTOR STRATEGIC DRIVERS

Internal strategic drivers represent responses to external strategic drivers

In Stretton 2021b we identified two broad groups of strategic drivers, namely internal and external drivers. These were presented in formats which could be seen as indicating that they were independent of each other. This, of course, is not normally the case, because responses relating to which internal drivers to adopt will virtually always be influenced by internal interpretations of how the organisation should best deal with the dominant external strategic drivers.

In the VUCA context, these responses depend on management's perceptions of, and approaches to, the disruptive VUCA forces

Hubbard & Rogers 2019 described what they describe as the VUCA challenges as follows.

> The business and societal disruptors being generated by the 4th Industrial Revolution are creating the VUCA conditions, the challenges, under which leadership and management must now modify strategies, make decisions, manage risks, plan events, and solve problems. The VUCA challenges can be viewed from various perspectives or contexts, such as social, religious, geo-political, business, etc. with the types of managerial approaches needed to address the challenges being dependent upon the perspective from which they are viewed.

Hubbard & Rogers discuss management's responses to the disruptive forces in the context of each of the four VUCA components separately

Hubbard & Rogers argue the need for management to respond to the disruptive forces in the context of each of the four VUCA components separately, as follows.

> The four elements of VUCA, each of which represents a distinct challenge to business and project management, are often blended together by the perceptions of most general-business leaders. This blended view ignores the need for each challenge to have a distinct set of operational and project management approaches

The authors say that

> The perspective taken within this paper is that of the project management discipline within a business management context.

However, the business management perspective is the more prominent in the first two of the following three elements of the broad format used by the authors in discussing each of the four VUCA components. [Here we use Volatility as the exemplar component]:

- Business management's perception of [Volatility]
- Business drivers as disruptors creating [Volatility]
- Project business management approach to [Volatility]

Business management's perception of [Volatility]

Hubbard & Rogers give nine examples of types of views that business management might have in its perception of relevant volatile forces, and particularly on how they are impacting the business. Although the authors discuss these under a four-element accelerating VUCA model for project management, none of the nine examples are project-specific – they all refer to the broader business management context.

Business drivers as disruptors creating [Volatility]

Hubbard & Rogers say that such drivers could include:

- Industrial transformation;
- Global workforce;
- Independent contractors;
- Individual/group entrepreneurship;
- Virtual and augmented reality;
- Augmented (artificial) intelligence; and
- Disruptive commercialised technologies.

Project business management approach to [Volatility]

The authors illustrate this with fourteen possible approaches. These include a few rather project-specific examples, but most are in the broader business management category, right up to corporate strategy, as exampled.

- Shifting corporate strategy in concert with, and in advance of, anticipated global market shifts;

To generalise slightly from Hubbard & Rogers' project and business management perspective into a more strategic management perspective, it would appear reasonable to suggest that this exemplar implies amending the internal organisational strategic drivers to better accommodate the effects of external disruptor strategic drivers on the organisation.

There is a similar pattern for each of the four VUCA elements. There are rather substantial checklists associated with each of the three bullet-pointed management activities for each VUCA element. The numbers of items in each checklist are shown in Figure 5-3.

	Volatility	Uncertainty	Complexity	Ambiguity
• Business management's perception of	9	10	12	11
• Business drivers as disruptors creating	7	6	6	7
• Project business management approach to	14	9	13	11

Figure 5-3: Number of items in the detailed checklists in Hubbard & Rogers 2019

These checklists could be a valuable resource for managers attempting to respond appropriately to disruptor forces in the accelerating VUCA era.

MANAGEMENT GUIDELINES IN VUCA CONTEXTS

The following figure is an amalgamation of relevant management-related materials from Hubbard & Rogers 2019, which hopefully might also be found useful.

+ RANGE OF HOW WELL ACTION RESULTS CAN BE PREDICTED -		
	COMPLEXITY **Primary way in which complexity can be effectively addressed by management (p.12)** ➢ *Complexity* – Restructuring of internal processes, systems and functional organisations and also mirroring/matching complexities within the enterprise's marketplace are the means by which management can reduce internal operational complexities. **General approaches in managing complexity (p.11)** • Make management-oriented changes in various internal positions, resources, structures, systems, and processes to assist in unravelling the complexities of external situations/ events and to reduce or eliminate internal complexity-generating situations/ events. • Restructure internal organisations and operations to reflect the determinable effects of internal & external complexities. **Project business management approaches to complexity (pp.15-16)** 13 approaches	***VOLATILITY*** **Primary way in which volatility can be effectively addressed by management (p.12)** ➢ *Volatility* – Enhancing operational and management agility and operational flexibility are management's key means of coping with and adjusting to unstable changes. **General approaches in managing volatility (p.11)** • Narrow the number of possible management actions/ decisions based upon risk/reward and timing of actions. • Make changes in various structures, systems, and processes to increase agility adaptability and innovation to reduce internal volatility. • Redirect resources to build slack and flexibility • Modify inventory and supply chains. **Project business management approaches to complexity (pp.13-14)** 14 approaches
	AMBIGUITY **Primary way in which ambiguity can be effectively addressed by management (p.12)** ➢ *Ambiguity* – Performing intelligent experiments and tests to support management in determining what business methods and strategies might be effective in current situations and events where the prior rules of conducting business no longer apply. **General approaches in managing ambiguity (p.11)** • Generate situations/event hypotheses and test them to determine and understand the various causal relationships. • Experiment, analyse, and generate related information to enhance and enlighten potential management decisions/ actions. **Project business management approaches to ambiguity (pp.16-17)** 11 approaches	***UNCERTAINTY*** **Primary way in which uncertainty can be effectively addressed by management (p. 12)** ➢ *Uncertainty* – Increasing information acquisition and interpretation is the means of increasing knowledge needed by management to make informed decisions and take related actions. **General approaches in managing uncertainty (p.11)** • Make focused changes in various information systems and processes, and add sources to acquire, collect, produce, analyse, and disseminate relevant information • Consider, view, and analyse any information from different perspectives **Project business management approaches to uncertainty (pp.14-15)** 9 approaches
	- **RANGE OF HOW MUCH IS KNOWN ABOUT A SPECIFIC SITUATION** +	

Figure 5-4: Assemblage of VUCA-related management approaches from Hubbard & Rogers 2019, using their Figure 2 as a basic format

RELEVANCE OF THESE MATERIALS ON ACCELERATED VUCA-RELATED DISRUPTIVE STRATEGIC DRIVERS TO THE COVID-19 ERA

It appears to be reasonable to broadly view the Covid-19 era as an accelerated version of VUCA. In particular, it is evident that the relevance of many of the technology-type disruptive drivers listed by Hubbard & Rogers has been accelerated because of the pandemic, as are many of the others listed. On the other hand, a few of these drivers appear to of diminishing relevance to the current era, as will be exampled shortly.

Dalcher 2020 has asked the question in relation to the current Covid-19 pandemic, *What's different now?* He answers this by discussing the following "seven major differences that characterise and emerge from the current crisis":

1. The return of big government
2. The return of borders
3. The return of the expert
4. The potential of big data
5. Crisis management
6. Intergenerational dynamics
7. Tough choices

The return of borders would indicate that a few of the above 38 disruptive drivers, such as *Global workforce, Globalisation of supply*, *Distributed manufacturing*, and *Delocalisation of competition* may not be so relevant in the Covid-19 era. On the other hand, *the potential for big data* appears to be increasingly realised, as are many, if not most, of the other technological disruptive drivers listed above.

With regard to *crisis management*, Dalcher 2020 identifies the following five "key attributes of crises", as summarised:

- ***Threat:*** the potential for grave loss for those affected which could undermine survival or the main goals of stakeholders;
- ***Urgency:*** the longer it takes to resolve the situation, the greater the potential for losses;
- ***Ambiguity:*** crisis situations are difficult to resolve because of uncertainty and a lack of clarity in the situation: ambiguity can pertain to the cause of the crisis, its effects, and how best to resolve the situation;
- ***Stress and emotions:*** threat and urgency trigger stress and emotions among those involved in the crisis, including fear, shock, panic, anger, hopelessness, and in some cases trauma;
- ***Opportunity and gain:*** despite the threatening nature of the threat and the trauma, opportunities also exist to contain the negative aspects and gain some positive outcomes ….

The *Ambiguity* attribute is shared with VUCA, whilst elements of the other four are often also found in many VUCA situations. However, in the context of organisational strategic management, arguably the most relevant attribute is *urgency*, and an ensuing need for rapid evaluation of changing situations, and rapid deployment of appropriate responses. We will look at this further in the next section.

Overall, many, if not most, of the above materials on the management of accelerated VUCA-related disruptive strategic drivers are very relevant to the Covid-19 era. As far as I am aware, there are as yet few, if any, relevant detailed guidelines specific to this pandemic era. It would therefore appear that the Hubbard & Rogers checklists and guidelines could be as good a starting point as any for developing management approaches for tackling Covid-19-related disruptors.

ORGANISING FOR RAPID RESPONSES IN THE STRATEGIC MGT. CONTEXT

Returning to the matter of urgency in the Covid-19 era, I had attempted to provide for some element of urgency in the second article of the series, by illustrating very substantial links between the operating stages of the organisational strategic management sequence and the executive management strategic review and response group, as illustrated in Figure 2-7, and reproduced as Figure 5-5 below.

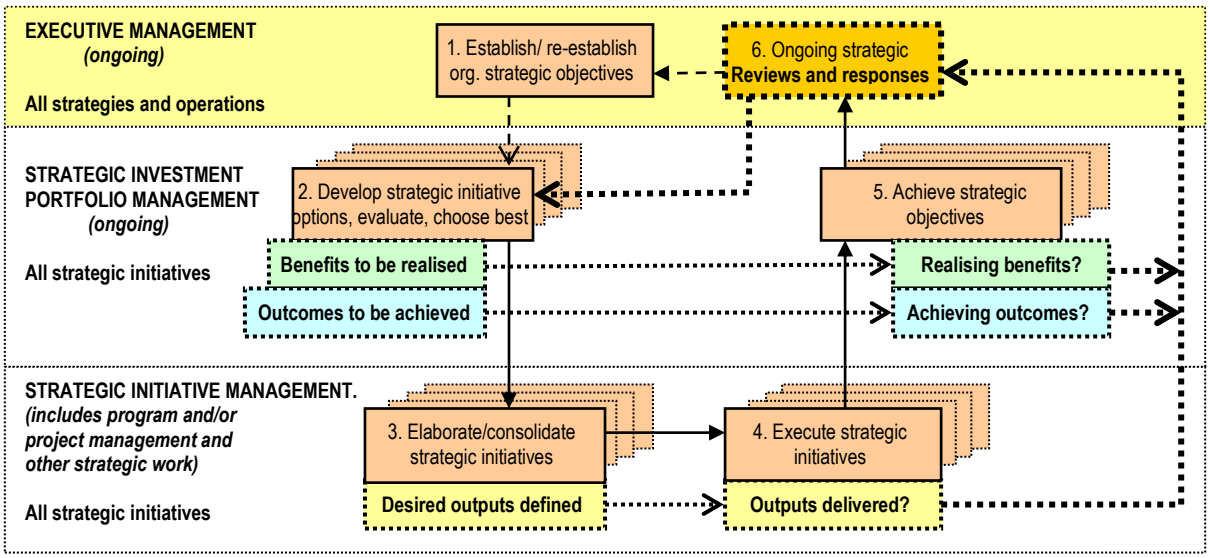


Figure 5-5: Adding links with executive management strategic review and response group

I did not suggest how frequently the review process would be undertaken, on the basis that the responsible senior executive (or executive group) would hopefully suite the frequency with the perceived urgency of need to respond. This may be slightly chicken-and-egg, but an increasingly frequent interplay of the two would appear to be a natural and necessary response to increasing turbulence in an accelerating VUCA-related environment, and particularly in the current era of the Covid-19 pandemic.

I had originally intended to conclude this series of articles at this point. However, in revisiting some of Pells' articles referred to earlier, his continuing advocacy for responsive decision support models to help organisations (and projects) better respond to significant disruptive events has suggested that a further article might be warranted on organisational strategic preparedness for such events. I propose to offer such an article as an addendum to this series.

SUMMARY OF ARTICLE

This fifth article of the series on revisiting organisational strategic management has continued with the strategic driver theme of the third and fourth articles, but this time focusing on accelerating global and local VUCA-related disruptors as drivers for organisational strategic responses. The impacts of many of these disruptor drivers appear to be increasingly relevant to the Covid-19 era.

We started by revisiting nine significant global events listed by Pells 2009b from the third article of this series, which were aligned to a list of key external strategic driver headings.

We then turned to Hubbard & Rogers' discussions on disruptions associated with the emergent 4th Industrial Revolution (Industry 4.0), and their perception of disruptors as drivers of VUCA and change. We concluded that we can also represent such VUCA-related disruptors as strategic drivers, because that is the role they play in any consequent modifications to organisational strategies.

After describing the VUCA components in a little more detail, we then allocated a listing of Hubbard & Rogers' 38 VUCA-related disruptor strategic drivers under the key external strategic driver headings developed earlier. It was also particularly noted that the 38 disruptor drives appears to constitute a very useful checklist.

We then moved to summarise some of Hubbard & Rogers' extensive discussions on management responses to VUCA-related disruptor strategic drivers. It was first noted that internal strategic drivers represent responses to external strategic drivers. Hubbard & Rogers then discuss management's responses in detail. For each of the four VUCA elements they discuss;

- Business management's perception of [Volatility; Uncertainty; Complexity, Ambiguity]
- Business drivers as disruptors creating [" ; " ; " ; "]
- Project business management approach to [" ; " ; " ; "]

The authors have developed quite detailed bullet-pointed checklists under each sub-heading, totalling 115 in all. I also collected some of the authors' VUCA-related management approaches into one figure, again in a basic type of checklist format.

We then turned briefly to discussing the relevance of these materials to the Covid-19 era, and, somewhat unsurprisingly, found very substantial relevance in many areas. It was also observed that, in the (apparent) absence of more specifically detailed guidelines about handling Covid-19-related disruptions, the Hubbard & Rogers guidelines and checklists would appear to represent as good a starting point as any for tackling disruptor strategic drivers associated with the pandemic.

Finally, this article returned briefly to the recursive organisational strategic management model developed earlier, and illustrated how the Stage 6 context could provide for responding as rapidly and appropriately as the perceived impact of both internal and external strategic disruptors would appear to warrant.

This article was originally intended to conclude this series. However, some of Pells' articles referred to above are prompting some further thoughts on organisational strategic preparedness for significant disruptive events. I may therefore add another article on this broad subject at a later date, perhaps in the form of an addendum to this series.

In the meantime, I will broadly summarise the main body of this series.

SUMMARY OF SERIES

In this series I have reframed some of my previous work on organisational strategic management, and augmented this with substantial new material, to develop perspectives which hopefully may have greater relevance for organisational strategic management (and thence component project management) in the VUCA environment, particularly as it has accelerated into the Covid-19 era.

The first article (Stretton 2020l) developed a recursive model of a basic organisational strategic management sequence to represent its cyclic nature, and added specific provision for ongoing strategic management reviews, and appropriate responses to changes. Two prominent causes of strategic implementation failures were identified. The first was ineffective performance at the executive management level, and we focused on the latter's responsibilities for establishing longer-term organisational strategic objectives, and then particularly in reviewing strategic implementation, and responding to significant variances. The second cause was fragmentation of operations and responsibilities, where we focused on the need to appoint both strategic investment portfolio managers, and strategic initiative managers, to cover specific stages of organisational strategic sequences, and the need to effectively delegate responsibilities to them.

The second article (Stretton 2020m) discussed augmenting this model to facilitate management of changes impacting on planned strategic initiative outcomes and the realisation of benefits. It summarised some previous work on the nature of strategic initiative outputs, outcomes and benefits, and added these headings to the recursive strategic management model. Detailed responsibilities for outcomes and benefits in particular were then discussed in the light of some previous work on these objectives. Representations of user involvement were also added.

The third article (Stretton 2021a) summarised some previous work on deliberate and emergent strategies, parts of which were added to a new assemblage and four-type classification of key strategic drivers from a variety of sources. These were then

consolidated into two lists – an internal strategic drivers list of eight examples, and a list of key external strategic drivers.

The fourth article (Stretton 2021b) essentially incorporated both the internal and external strategic drivers into the basic recursive organisational strategic management model developed in the first article. It also added new materials on difference between industries in the nature and priorities they typically have ascribed to such strategic drivers.

This fifth article has added accelerating global and local VUCA-related disruptor strategic drivers to the above lists of drivers, and discussed some checklists and guidelines to facilitate their management, particularly in relation to theirelevance to the Covid-19 era.

Hopefully these newer perspectives on organisational strategic management may contribute to organisational effectiveness in these accelerating VUCA environments.

REFERENCES

DALCHER, Darren (2020). Leadership in times of crisis: What's different now?. *PM World Journal,* Vol IX, Issue V, May. https://pmworldlibrary.net/wp-content/uploads/2020/05/pmwj93-May2020-Dalcher-leadership-in-times-of-crisis.pdf

HUBBARD, Darrel G. & Peter W. ROGERS (2019). A VUCA*A*-Mindset and VUCA*A*- Model for project business management in the 4th Industrial Revolution. *PM World Journal,* Vol. VIII, Issue VII, August. https://pmworldlibrary.net/wp-content/uploads/2019/08/pmwj84-Aug2019-Hubbard-Rogers-VUCAA-Mindset-and-VUCAA-Model-in-4th-Industrial-Revolution.pdf

PELLS, David L. (2009b). Disruptive events! Are you, your project or your organisation prepared? *PM World Today,* Vol XI, Issue IX, September. https://pmworldlibrary.net/wp-content/uploads/2016/12/2009-Sept-Pells-Disruptive-Events-Are-you-prepared.pdf.

PELLS, David L. (2009a). Global business intelligence for managers of programs, projects and project-oriented organisations.. *PM World Today,* Vol XI, Issue VI, June. https://pmworldlibrary.net/wp-content/uploads/2016/12/2009-June-Pells-Global-Business-Intelligence-for-Managers.pdf

PELLS, David L. (1999). Aftershocks: How significant global events can effect the project management profession. https://pmworldlibrary.net/wp-content/uploads/1999/11/1999-Pells-PMISA-AFTERSHOCKS-FINAL.pdf

PELLS, David L. (1998). Global tides of change: Significant recent events and trends affecting globalisation of the project management profession. https://pmworldlibrary.net/wp-content/uploads/2015/01/1998-oct-global-tides-of-change-Pells-pmi98-conference-paper.pdf

STRETTON, Alan (2021b). *Revisiting organisational strategic management (4):* Incorporating strategic drivers into the recursive strategic mgt model, and discussing differences between

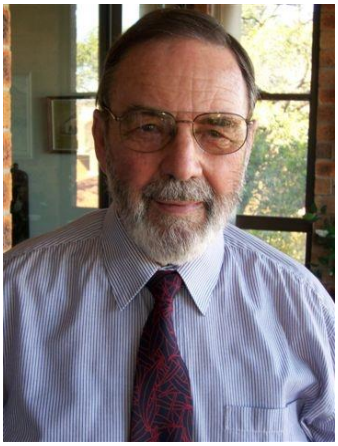
industries. *PM World Journal*, Vol X, Issue III, March. https://pmworldlibrary.net/wp-content/uploads/2021/03/pmwj103-Mar2021-Stretton-incorporating-strategic-drivers-revisiting-organisational-strategic-management-4.pdf

STRETTON, Alan (2021a). *Revisiting organisational strategic management (3):* Deliberate and emergent strategies, and a classification of strategic drivers. *PM World Journal*, Vol X, Issue I, January. https://pmworldlibrary.net/wp-content/uploads/2021/01/pmwj101-Jan2021-Stretton-Deliberate-and-emergent-strategies-and-classification-of-strategic-drivers.pdf

STRETTON, Alan (2020m). *Revisiting organisational strategic management (2):* Augmenting the recursive strategic management model to help manage changes impacting outcomes and benefits. *PM World Journal,* Vol. IX, Issue XII, December. https://pmworldlibrary.net/wp-content/uploads/2020/12/pmwj100-Dec2020-Stretton-augmenting-recursive-model-revisiting-strategic-management-part-2-2.pdf

STRETTON, Alan (2020l). *Revisiting organisational strategic management (1)* A recursive organisational strategic management model, and responsibilities for managing various stages. *PM World Journal,* Vol IX, Issue XI, November. https://pmworldlibrary.net/wp-content/uploads/2020/11/pmwj99-Nov2020-Stretton-Revisiting-organisational-strategic-management-1-a-recursive-model.pdf

About the Author



Alan Stretton, PhD

Faculty Corps, University of Management and Technology, Arlington, VA (USA)

Life Fellow, AIPM (Australia)

Alan Stretton is one of the pioneers of modern project management. He is currently a member of the Faculty Corps for the University of Management & Technology (UMT), USA. In 2006 he retired from a position as Adjunct Professor of Project Management in the Faculty of Design, Architecture and Building at the University of Technology, Sydney (UTS), Australia, which he joined in 1988 to develop and deliver a Master of Project Management program. Prior to joining UTS, Mr. Stretton worked in the building and construction industries in Australia, New Zealand and the USA for some 38 years, which included the project management of construction, R&D, introduction of information and control systems, internal management education programs and organizational change projects. He has degrees in Civil Engineering (BE, Tasmania) and Mathematics (MA, Oxford), and an honorary PhD in strategy, programme and project management (ESC, Lille, France). Alan was Chairman of the Standards (PMBOK) Committee of the Project Management Institute (PMI®) from late 1989 to early 1992. He held a similar position with the Australian Institute of Project Management (AIPM), and was elected a Life Fellow of AIPM in 1996. He was a member of the Core Working Group in the development of the Australian National Competency Standards for Project Management. He has published over 200 professional articles and papers. Alan can be contacted at alanailene@bigpond.com.au.

To view other works by Alan Stretton, visit his author showcase in the PM World Library at http://pmworldlibrary.net/authors/alan-stretton/