FACT SHEET

SABPP™
SA BOARD FOR
PEOPLE PRACTICES
Setting HR standards

INNOVATION AND DISRUPTION DILEMMAS FOR FIRMS AND THEIR HR FUNCTIONS

HOW TO READ AND INTERACT WITH THIS FACT SHEET

This Fact Sheet is designed to reflect the inter-connectivity and layered paths of the fourth industrial revolution by the hyperlinks to multimedia resources and networks of information, juxtaposed textboxes and lines of thinking, and multimodal engagement of the reader.

It is meant to be a medium for the reader to navigate and journey in-between the many resources available.

INFORMATION

This icon represents a small piece of extra information that can add to the context of a certain section, paragraph or point being made.

EXTERNAL RESOURCES

External resources for the added benefit of the reader. This icon will be used in the format of a button and will direct the reader through a link to a website with the relevant information.

INSIGHT

A small insight into the section, paragraph or point being made. The icon is used in the format of an indication and reference to a block with the relevant insight.

CLICK HERE

This icon gives the reader an opportunity to click on a button and has the reader taken to a space that the author would want to direct the readers attention.
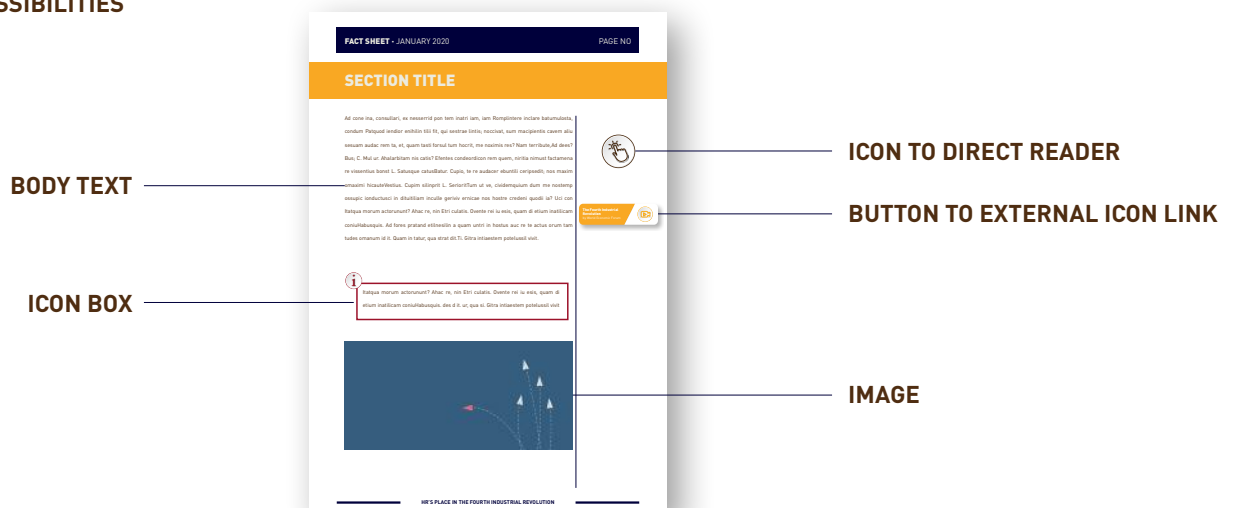
VIDEO

A video can be a great way to bring across an important point to the reader. This icon will be in the format of a button that will transport the reader to a video through a web link.

PLEASE NOTE: Any text that has been **bolded**, *italicised* and in a unique colour to the usual body text is also a link to more resources and is simply used by clicking on the text. You will be directed to the resources that the author has provided externally.

PAGE LAYOUT POSSIBILITIES

BODY TEXT

ICON BOX

ICON TO DIRECT READER

BUTTON TO EXTERNAL ICON LINK

IMAGE

INTRODUCTION

In the various debates and dialogues on the fourth industrial revolution (4IR) one finds there is the frequent and varied use of the terms, 'innovation' and 'disruption'. At times there is also the interchangeable use or conflation of these terms given that these can be entwined at times. This is reflected in the previous fact sheet on **HR's place in the fourth industrial revolution**. The purpose of the present fact sheet is to take the discussion further and clarify innovation and disruption. It first identifies the respective definitional issues. It then explores ways of differentiating the forms or types of innovation and disruption through a selection of typologies and theories. These typologies and theories provide possible starting points and a structure to begin to identify and address the dilemmas firms and their HR functions experience. These include identifying and differentiating the form or type of innovation and disruption one is anticipating and/or responding to; or developing and managing a specific set of mindsets, strategies and capabilities to create and execute a specific innovation and disruption.

Without the clarification of the definitions of innovation and disruption and the differentiation of their forms or types, there is a danger that firms and their HR may approach these in an undifferentiated manner. This means, for example, following a 'one size fits all' approach to innovation and disruption; or misidentifying the specific form and type of innovation and/or disruption and adopting inappropriate strategic actions or responses. As Christensen, Raynor and McDonald (2015) argue, if "we get sloppy with our labels [and definitions] or fail to integrate insights from subsequent research and experience into [the theory we use], then managers may end up using the wrong tools for their context, reducing their chances of success". They add that the "mantra "Disrupt or be disrupted" can misguide us."

The organisation of the Fact Sheet is illustrated in the adjacent table. The fact sheet can be navigated from the table and one can go directly to any of the sections of interest. Some of the threads through the different sections are as follows:

- Innovation is differentiated in terms of its locus (within the different level of value chains) and the degree of novelty or transformation therein or thereof. These lead to the identification of various types of innovation as well as many attempts to organise some of these in typologies or frameworks.

- Disruption can be the displacement or substitution of the existing status quo without necessarily introducing novelty. It can be a specific process of displacement

leading to a defined outcome as outlined in the theory of disruptive innovation, where the novelty is in the form of an 'inferior' iteration of the existing product/ service that evolves over time or in the serving of an unserved segment.

- Innovation and disruption tend to be seen as, or are conflated with, technologies or technology innovation. There is a need to differentiate technology innovation from value creation and innovation.

- As firms and its capabilities, business model and interdependencies evolve over time so does its openness, readiness and capacity for certain forms or types of innovation and disruption. One of the dilemmas for firms and their HR is the form and degree of separation or integration of the established/ existing and the entrepreneurial/innovative.

The fact sheet speaks to business alignment as indicated in the SABPP HR Standards. Continuing with the previous fact sheet on HR's place in 4IR, it gives further context to the HR Standards on Strategic HRM, Talent Management and HR Risk Management.

INNOVATION

This section begins with the discussion of the evolving definition of innovation and the different aspects of novelty identified over time. Through the discussion it points out that innovation is not just the creation of something new, but also the commercialisation and scaling of the new. For this reason, it links the discussion to the firm or business value chain. This introduces the idea of the locus of innovation at different levels of value chains, that is, the value chain of a firm, industry, national economy or global economy. It provides context for the observation of how innovation has been circumscribed to singular, segregated and closed spaces within firms. It also provides the background for the discussion on the shifts in the locus of innovation within firms, industries and global economies in the section on the theories of innovation and disruption.

Following the discussion on the definition of innovation the section then draws out observations on the innovation landscape and the many types of innovation in the literature. This is followed by a discussion on typologies of innovation, which can help provide insight into the innovation landscape. As one differentiates the types of novelty or innovation, one can also differentiate the degree of novelty. This can be a spectrum from *innovation in* the above-mentioned loci in terms of the internal configuration of the value chain and the offering to customers, the *innovation of* these, or the *transformation or reinvention of* them.

INNOVATION

- Defining innovation
- Innovation landscape comprising various models and types
- Typologies of innovation

DEFINING INNOVATION

In everyday conversation one finds that the term innovation is used broadly to mean novelty and transformation; or is used specifically to refer to a new technology feature or product. Similarly, as one scans through the many texts or internet search results on innovation in firms, one finds both broad prescriptions for novelty or transformation of the business as a whole as well as specific prescriptions for the generation of novel ideas or products and the development of particular attributes and core capabilities of firms. One could suggest that these broad and specific prescriptions mirror how the definition and the landscape of innovation has evolved over the years. Kotsemir, Abroskin and Meissner (2013), for example, chart how the definitions of innovation have come to progressively identify and incorporate, over time, different aspects. They capture these different aspects of innovation in the below definition:

> "innovation as [an] *idea* (concept) of something new[;] as *something new* (some real object: product, service or software); as *process* of doing, creating something new; as the *instrument* for doing, creating something new; as *condition* (environment) for doing something new[;] as *human abilities* for doing something new; as *process of change*" (italics added, p8)

In the literature one finds the increasing reference to, and debates on, innovation **ecosystems**[1], which one can add to innovation as conditions or environment in the above definition. One could add that innovation is not just the *idea* and *creation* of 'something new', but also the *commercial viability* of the something new as well as of the process and instrument for doing and creating the something new (Crainer and Dearlove, 2014a). That is, the *creation, commercialisation and scaling* (achievement of **economies of scale** and efficiencies) of the new. Here one could consider the **business value chain** and the economies of scale and the efficiencies achieved across the activities of the value chain.
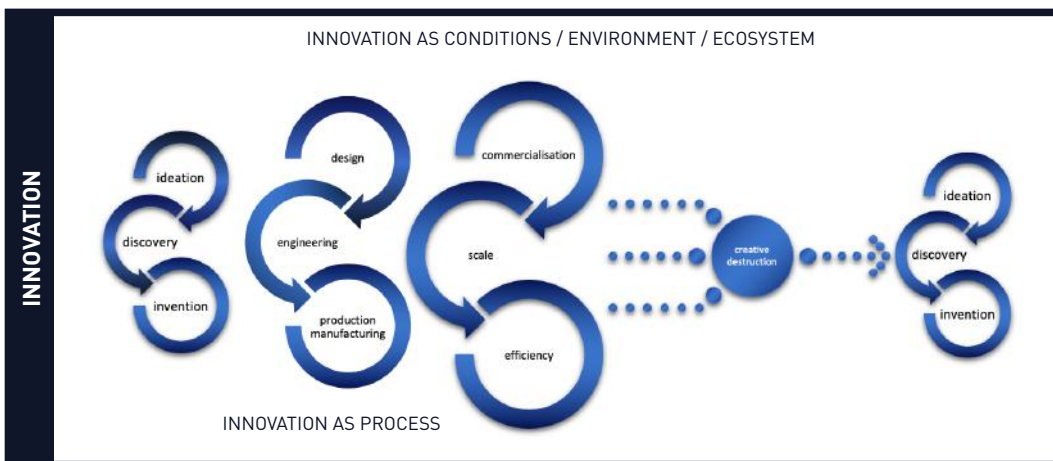
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1. Grandstrand and Holgersson (2019) provide the following definition of innovation ecosystems: "An innovation ecosystem is the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors" (p1). See figure three in their article for a breakdown of the aspects of actors, activities, artefacts, institutions, collaboration, competition, and co-evolution and co-specialisation.
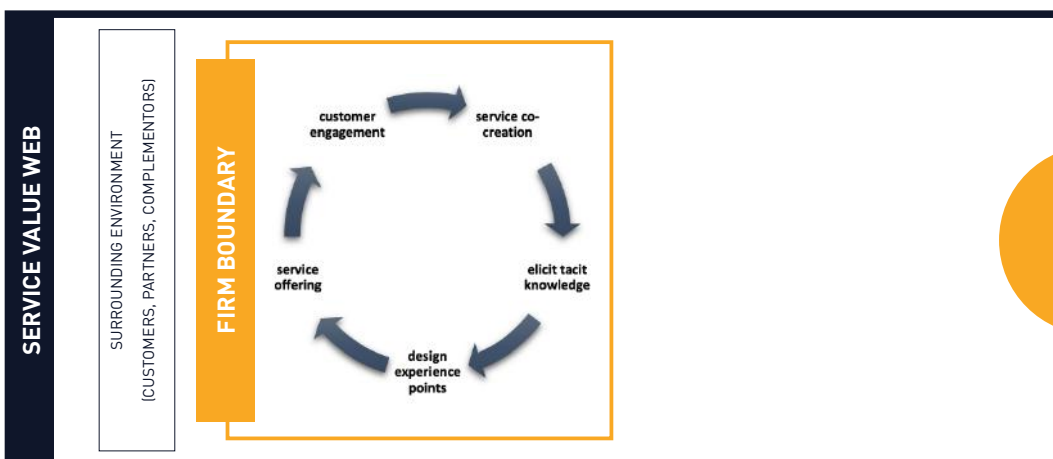
The figure below attempts to illustrate the aspects, commercialisation and scaling of innovation in relation to the business value chain. The figure adapts Michael Porter's often cited value chain (and how it locates human resource management (HRM)) and Chesbrough's (2011) alternate for service businesses. Chesbrough argues that Porter's value chain is based on product-centric businesses and, therefore, is depicted as a linear process; whereas a services value chain is a web that reflects the continuous, iterative process of customer engagement and the co-creation of services with the firm. The question is where should HRM be located in relation to innovation. The figure also illustrates the suggested continuous process and cycle of *'creative destruction'* and the necessity for constant exploration, rediscovery and reinvention for introducing novel markets, products and services.

INNOVATION

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INNOVATION AS CONDITIONS / ENVIRONMENT / ECOSYSTEM

design · commercialisation · ideation · discovery · engineering · scale · invention · production manufacturing · efficiency · creative destruction · ideation · discovery · invention

INNOVATION AS PROCESS

FIRM INFRASTRUCTURE (finance, planning, investor relations)

TECHNOLOGY DEVELOPMENT (product design, process design, market research)

HUMAN RESOURCE MANAGEMENT (recruitment, learning& development, compensation)

PROCUREMENT (services, machines, advertising, data)

INBOUND LOGISTICS · OPERATIONS · OUTBOUND LOGISTICS · MARKETING & SALES · AFTER SALES SERVICE

Traditional product-centric value chain (adapted from Institute for Strategy & Competitiveness (HBS): *Porter value chain*)

SURROUNDING ENVIRONMENT (CUSTOMERS, PARTNERS, COMPLEMENTORS)

FIRM BOUNDARY

customer engagement · service co-creation · elicit tacit knowledge · design experience points · service offering

Service-centred value web (adapted from Chesbrough (2011): *Services value web*)

INNOVATION LANDSCAPE COMPRISING VARIOUS MODELS AND TYPES

Taking a closer look at the literature, though, one finds that there are many ways of defining and conceptualising innovation as well as approaching, implementing and managing innovation. For example, one finds recommendations from product, disruptive, architectural and blue ocean innovations to platform, experiential, frugal and reverse innovations (Chandy and Prabhu, 2010; Kotsemir, Abroskin& Meissner, 2013; von Zedtwitz, Corsi, Veng Søberg & Frega, 2019). Thus, there is a plethora of innovation models and types, and a number of classification frameworks or meta-typologies thereof.

> "The extensive literature on innovation typologies can sometimes resemble a Tower of Babel with different terms used to refer to similar concepts and, conversely, similar terms used to refer to different concepts. Moreover, terms and schemes sometimes overlap or only partially capture the complexity of the phenomenon of innovation" (Chandy et al, 2010, p4)

The first realisation then is that the innovation landscape is complex, and it comprises complementary as well as contrasting and conflicting definitions and types of innovation. The varied types can provide rich insights, but they can also be confusing and disorientating to navigate. This is especially given that it may also incorporate, for example, varied perspectives on creativity, ideation, entrepreneurship, strategy and execution as well as differing positions on organisational design and processes, requisite capabilities and skills, and achievement of economies of scale.

The complexity of innovation requires a shift in our thinking. That is, a shift from viewing it as a singular construct or unidimensional concept (whether as an idea, product or attribute of individuals or firms) to appreciating that it is multi-dimensional; and is located and given form within a web of related concepts and perspectives (Reillon, 2016). This is illustrated in Kotsimer et al's (2013) definition of innovation, which was presented above. This definition and the available typologies provide a helpful start to identify and explore the multiple dimensions of innovation and how these are organised.

The typologies categorise innovation in relation to different criteria. These criteria seem to be mainly the 'what, where, how and why' questions of innovation. That is, what is the purpose of innovation and why is it necessary or important; what value does it create; what is the process of innovation; what are the sources and where is innovation located; who are seen as the innovators; how do they innovate or what path(s) do they follow; how is innovation adoption by markets and customers understood; and what are the outcomes of innovation. Examples of typologies will be discussed in the next section.

The second realisation is that innovation has also traditionally been circumscribed to singular, segregated and closed spaces. It has been viewed as the activities, work and patents of a firm's research and development (R&D) laboratories or *'skunk work projects'* (Crainer et al, 2014a). The more recent incarnation of this is the romanticised image of Silicon Valley mavericks working at the frontiers in their garages; the *innovation labs* of Silicon Valley platform and technology companies; or innovation labs of large corporates[2]. Thus, as Crainer et al illustrate in the quote below, one finds the disconnect between creativity and business operations; and the framing of these as a dichotomy.

INNOVATION

- Defining innovation
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2. See the following *list of innovation labs of global corporates* and surveys of innovative *tech companies*, *tech start-ups* and *ecosystems* in Africa.

"The stereotypical corporate world is full of buttoned-up suites and left-brained rational decision makers, whereas the world we associate with creative endeavours is populated with undisciplined, scruffily clad, right-brained mavericks. It is the seeming disconnect between creativity and business that makes innovation so difficult for companies (especially large companies) to understand and manage" (Crainer et al, 2014a, p4)

However, one also finds the recent trend of corporates showcasing their innovation labs where the stereotypes are not as stark as before (for example, see the blending of attire and people in the below photo from Stanford Life Design Lab).

Stanford Life Design Lab

Crainer et al suggest that there is a parallel disconnect between innovation and strategy, where innovation was the "preserve of a distant R&D department, whereas strategy was the responsibility of senior executives at headquarters" (p129). One finds then alongside the romanticised images of Silicon Valley mavericks and the stereotypes of strategising executives there is the shift in thinking that innovation and strategy is not to be located within, and delimited to, specific spaces and persons. It is argued that in reality it is diffuse within and across the entire firm; and needs to be diffused and/or decentred given the changing world of work and the dynamics of competitive advantage and value creation in the fourth industrial revolution (see the SABPP fact sheet on **HR's place in the fourth industrial revolution**). This means shifting and rethinking the management of innovation. The challenge is whether this is possible, as the dilemma for firms is how to manage both innovation and efficiency. That is, whether it is question of how to be ambidextrous or how to incubate the entrepreneurial apart from the established while still building bridges between them for commercialisation and development of economies of scale.

The third realisation is that the way innovation is being defined and conceptualised is itself being continuously innovated (Crainer et al, 2014a). This means that the innovation landscape and how we reflect on it is continuously evolving. Comparing and contrasting the many typologies of innovation can help track how this landscape and how we reflect on it are evolving. The discussion below showcases some of the available typologies and the categories therein on the nature, locus/space, value, and/or outcome of innovation. It then explores disruption and thereafter focuses on specific theories or frameworks on innovation and disruption, that is, disruptive innovation, business model innovation, open innovation, reverse innovation, and blue ocean or value innovation.
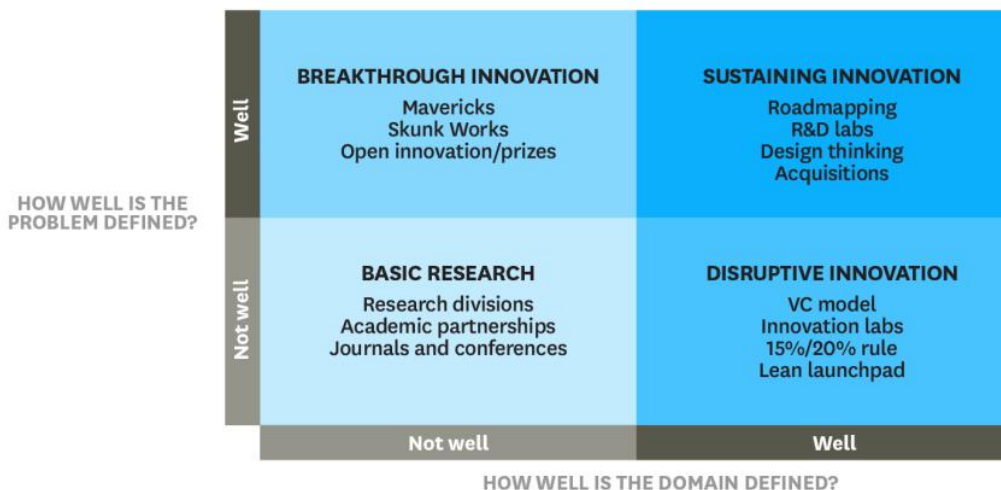
TYPOLOGIES ON INNOVATION

Comparing and contrasting typologies can be bewildering, but it can also provide insight into the innovation landscape and how it is evolving. Three typologies are presented below to provide a sense of the typologies available and how the above questions of the 'what, where, how and why' of innovation are being addressed. They also provide the background for the later discussion of specific theoretical models of innovation and disruption.

The first typology is by Satell (2017), who focuses on the what, how and who of innovation. He focuses in on problem definition and how well the skills required are defined. He seeks to provide firms with a matrix to guide them on the nature of the problem they are trying to solve and the appropriate innovation solution for it. The matrix categorises innovation in four types as illustrated below. Interestingly, Satell's typology differentiates mavericks and skunk work projects from research and development labs and design thinking based on how well the skill domain is defined. The former is seen as breakthrough innovation, requiring unconventional skills, and the latter as sustaining innovation that "improve[s] existing capabilities in existing markets". He categorises innovation labs as disruptive innovation based on the problem not being well defined as there is the need to innovate the business model.

HOW WELL IS THE PROBLEM DEFINED?

Well	**BREAKTHROUGH INNOVATION** Mavericks Skunk Works Open innovation/prizes	**SUSTAINING INNOVATION** Roadmapping R&D labs Design thinking Acquisitions
Not well	**BASIC RESEARCH** Research divisions Academic partnerships Journals and conferences	**DISRUPTIVE INNOVATION** VC model Innovation labs 15%/20% rule Lean launchpad
	Not well	Well

HOW WELL IS THE DOMAIN DEFINED?

SOURCE GREG SATELL   © HBR.ORG

Satell (2017): Four types of innovation

In contrast to Satell, other typologies differentiate and categorise what is innovation in terms of the novelty introduced in the existing business value chain and business processes; or the exploration of new opportunities and the reimaging of the value chain. For example, Reillon (2016) cites the Organisation for Economic Co-operation and Development's (OECD) model of four types of innovation. As illustrated below, it differs from Satell's matrix as the focus is on the firm's products, business processes, marketing and management and organisation. Here, one notes innovation as problem definition and skill is located within the business value chain.

Type of innovation	Characteristics
Product innovation	A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user-friendliness or other functional characteristics.
Process innovation	A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.
Marketing innovation	A new marketing method involving significant changes in product design and packaging, product placement and promotion, and/or in the pricing of goods and services.
Organisational innovation	A new organisational method involving changes in business practices, workplace organisation or external relations.

Reillon (2016): OECD model of four types of innovation

Larry Keeley of Doblin (2015) provides a more elaborated and differentiated model of the value chain and innovation thereof. Take a look at his 2017 **presentation at the Singularity University conference** in South Africa where he discusses the model of innovation as the creation, capture and delivery of value. The model is illustrated below and is organised in terms of (1) the internal configuration of the firm, (2) their offering and (3) the customer experience that they provide for respectively. Keeley describes the related innovation of these as (1) business model, (2) platform and (3) experience-centric innovation.

Profit Model	Network	Structure	Process	Product Performance	Product System	Service	Channel	Brand	Customer Engagement
	CONFIGURATION			OFFERING		EXPERIENCE			

PROFIT MODEL
The way in which you make money

For example, how **Netflix** turned the video rental industry on its head by implementing a subscription model

NETWORK
Connections with others to create value

For example, how **Target** works with renowned external designers to differentiate itself

STRUCTURE
Alignment of your talent and assets

For example, how **Whole Foods** has built a robust feedback system for internal teams

PROCESS
Signature or superior methods for doing your work

For example, how **Zara's** "fast fashion" strategy moves its clothing from sketch to shelf in record time

PRODUCT PERFORMANCE
Distinguishing features and functionality

For example, how **OXO Good Grips** cost a premium but its "universal design" has a loyal following

PRODUCT SYSTEM
Complementary products and services

For example, how **Nike+** parlayed shoes, sensors, apps and devices into a sport lifestyle suite

SERVICE
Support and enhancements that surround your offerings

For example, how "Deliver WOW through service" is **Zappos'** #1 internal core value

CHANNEL
How your offerings are delivered to customers and users

For example, how **Nespresso** locks in customers with its useful members only club

BRAND
Representation of your offerings and business

For example, how **Virgin** extends its brand into sectors ranging from soft drinks to space travel

CUSTOMER ENGAGEMENT
Distinctive interactions you foster

For example, how **Wii's** experience draws more from the interactions in the room than on-screen

Doblin (2015): Ten types of innovation

DISRUPTION

This section begins with a brief discussion on the definitional challenges with disruption. It then explores the descriptions of digital platforms as disruption. This leads into the discussion on the theories of innovation and disruption. The first theory that is discussed is that of disruptive innovation, which challenges the use of the term disruption in the discussion on digital platforms and other examples. The theory defines a specific process and outcome as disruptive innovation.

DISRUPTION

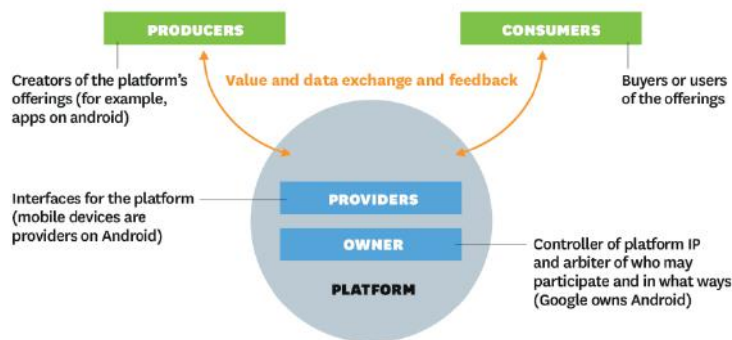- Definitional status quo
- Digital platforms as disruption?

DEFINITIONAL STATUS QUO

While innovation is used in everyday conversation as meaning novelty, disruption tends to be used to indicate an interruption, undoing or displacement of the status quo. At times one finds the conflation of the terms innovation and disruption as novel technology or other form of novelty is seen as necessary for displacement (Christensen, Raynor & McDonald, 2015). As with innovation, though, one finds the similar varied as well as broad and specific use of the term *disruption* (Rachleff, 2013). This includes the discussion on disruption in relation to the fourth industrial revolution (4IR), which Schwab (2017), the prominent proponent of 4IR, does acknowledge. As discussed in the SABPP factsheet on *HR's place in 4IR*, various authors caution against conflating particular set of technologies with the disruption of industries and firm's business models or the various modes thereof (Armstrong, 2018; Kavadias, Ladas and Loch, 2016). The factsheet provides an illustration from Armstrong (2018) on the various modes of disruption.
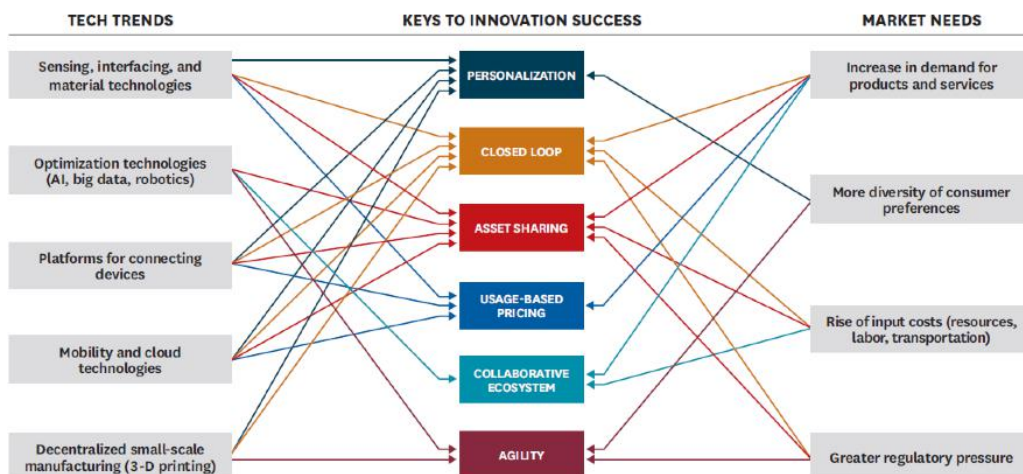
DIGITAL PLATFORMS AS DISRUPTION?

Digital platforms are cited as prominent examples of disruptive business models that captured value from traditional, incumbent firms and role players as well as create value by expanding the market. Airbnb and Uber are cited as prominent examples of disrupting incumbents (such as hotels and taxis), capturing value and changing the competitive basis and dynamics by aligning the supply and demand side. In the case of Uber it aligned the supply of drivers and the demand for point-to-point services. It also expanded the supply of drivers and cars and the demand and users of point-to-point services.

Google presents another example of digital platform business. van Alstyn, Parker and Choudry (2016) unpack Google's platform business and ecosystem in the adjacent diagram, differentiating the roles of owner, providers, producers and consumers. Compare it to the previous illustration of Porter's value chain to see how it reimagines the value chain.

van Alstyn et al (2016): Google platform

Kavadias, Ladas and Loch (2016) present a different perspective. They argue that a platform is a means or factor of innovation success and, thus, it should not be seen as business model innovation itself. They identified six features of business models for successful innovation in the middle column based on their research. They align the six features to technology trends in the left column and market needs in the right column in the figure below. Note that platforms are located in the left column on 'tech trends' rather than the features of business innovation. In the next section a theory of how business model and its innovation evolves is discussed further. It helps provide a particular definition of business models, which has similarities with the elements that Keeley identifies as comprising a business model in his ten types of innovation model that was illustrated above.
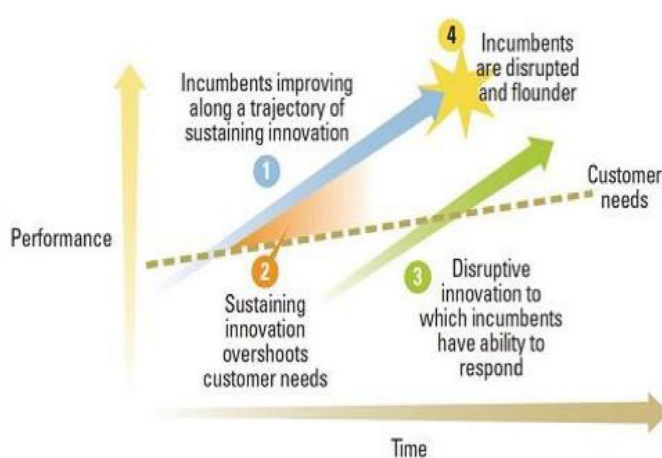
THEORIES OF INNOVATION AND DISRUPTION

The sections that follow explore the theories on disruptive, business model, open, reverse, and blue ocean or value innovation. Through the discussions one notes the shift in the locus of innovation and the theoretical differentiation of innovation. This helps to understand disruption as displacement and its relation to innovation. Kim and Mauborgne (2017) provide a helpful model to integrate the different theories by differentiating disruptive and nondisruptive creation. The insight gained from the different theories is that as firms and its capabilities, business model and interdependencies evolve over time so does its openness, readiness and capacity for certain forms or types of innovation and disruption. A key dilemma for firms and their HR is the form and degree of separation or integration of the established/existing and the entrepreneurial/innovative.

THEORIES OF INNOVATION AND DISRUPTION

- Disruptive innovation
- Business model innovation
- Open innovation
- Reverse innovation
- Blue ocean or value innovation

DISRUPTIVE INNOVATION

Clayton Christensen (1997) presents a specific definition and theory of *disruptive innovation*. This contrasts with the general use of the word disruption in the many discussions on 4IR, business models and platforms for example (Christensen et al, 2015). He draws a distinction between sustaining and disruptive innovation. Christensen and his co-authors suggest that firms are not disrupted because of irrational decision-making or incompetence on the part of executive or senior management. They are disrupted because they continue to engage in sustaining innovation where existing products and services are incrementally improved in performance and made more complex to meet real and anticipated customer needs. These firms draw on their existing knowledge, expertise, decision-making and capital allocation; and invest in, refine and embed these further to continue to improve their existing products and services. However, this leads to an increase in cost of production and, therefore, the increase in price to the customer. The sustaining innovation also leads to an increase in the performance of the product that exceeds the customers' needs or the performance requirement for their *'job to be done'*[3]. This opens a gap. This is captured in the diagram below, which illustrates (1) the trajectory of sustaining innovation, (2) where the performance begins to exceed customers' needs, (3) where the gap emerges for disruptive innovation, and (4) where the disruptor's sustaining innovation over time captures the market segment served by incumbents.

Watch Christensen explain his theory of disruptive innovation

King and Baatartogtokh (2015): Sustaining and disruptive innovation

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3. Christensen outlines the 'job to be done' idea in this *podcast* and the *transcript* thereof.

Disruptive innovation is a process where a new entrant's evolving business model and disruptive technologies allow the capture of the lower end of an established market for products and services; and/or the creation of new markets for unserved customer segments. Over time the new entrant begins to encroach on the mainstream of the market and encroaches on the incumbent's market position based on their sustaining technologies. Christensen uses the term technology broadly to include the processes in the value chain (as can be seen in the quoted sections in the box below).

THEORIES OF INNOVATION AND DISRUPTION

- Disruptive innovation
- Business model innovation
- Open innovation
- Reverse innovation
- Blue ocean or value innovation

In his own words:

The research "shows that in the cases of well-managed firms [..] **good management** was the most powerful reason they **failed** to stay atop their industries. Precisely because these firms *listened to their customers, invested aggressively in new technologies* that would provide their customers more and better products of the sort they wanted, and because they *carefully studied market trends and systematically allocated investment capital to innovations* that promised the best returns, they lost their positions of leadership"

"There are times at which it is right **not** to listen to customers, right to invest in developing lower-performance products that promise lower margins, and right to aggressively pursue small, rather than substantial, markets"

"[...] technology means the processes by which an organization transforms labor (sic), capital, materials, and information into products and services of greater value. All firms have technologies... This concept of technology therefore extends beyond engineering and manufacturing to encompass a **range** of marketing, investment, and managerial **processes. Innovation refers to a change in one of these technologies**" (italics and bold added, 1997, p9)

Do you think Uber is a disruptive innovation? Christensen et al (2015) argue that it is **not a disruptive innovation** in terms of their theory:

"Uber has quite arguably been *increasing total demand*—that's what happens when you develop a better, less-expensive solution to a widespread customer need. But disrupters start by appealing to *low-end or unserved consumers and then migrate to the mainstream market*. Uber has gone in exactly the *opposite direction*: building a position in the mainstream market first and subsequently appealing to historically overlooked segments" (italics added)

The distinction of sustaining and disruptive innovation presents a dilemma for firms and HR. It is a dilemma of how to utilise their current capabilities (which include the broader concept of technologies), while also creating new capabilities such as organisational competencies and technologies. It poses the question of what competencies and technologies should be invested in and developed while trying to maintain competitive position and sustainability.

BUSINESS MODEL INNOVATION

**THEORIES OF INNOVATION
AND DISRUPTION**

■ Disruptive innovation

■ Business model innovation

■ Open innovation

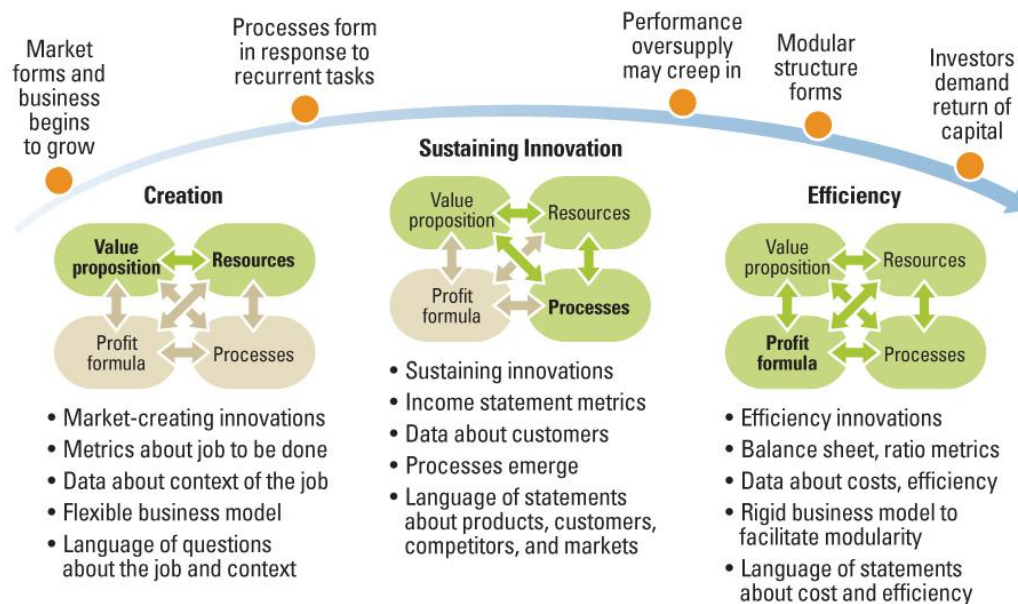■ Reverse innovation

■ Blue ocean or value
  innovation

Christensen further develops on the above argument on innovation by exploring how firm's business model evolves. Christensen with Bartment and van Bever (2016) define a business model as comprising four elements:

" (1) a value proposition for customers; (2) resources, such as people, money, and technology; (3) the processes that the organization uses to convert inputs to finished products or services; and (4) the profit formula that dictates the margins, asset velocity, and scale required to achieve an attractive return"

They argue that as the firm's business model becomes embedded and the interdependencies between the elements of the model becomes entrenched, it becomes harder to change. Thus, they state that "business models by their very nature are designed not to change, and they become less flexible and more resistant to change as they develop over time". They depict the journey of a business model in the figure below and the corresponding evolution from market-creating, sustaining to efficiency innovations. They point out that each "stage of the journey supports a specific type of innovation, builds a particular set of interdependencies into the model, and is responsive to a particular set of performance metrics." This means that through the journey of the business model there is growing distance from the actual contexts of the customer and their specific needs or jobs that need to be done by them. For example, with efficiency innovations the focus and metrics are on costs, efficiency and return of capital.

Christensen et al (2016): Journey of a business model

They caution that any introduction of innovations needs to be in alignment with the specific stage of the business model journey. This follows from their observation of how the "interdependencies and rigidities [of the existing business model] constrain business units [or a firm] to [continue] pursuing their existing journey." Thus, they warn of managerial attempts to "compel existing business units to pursue new priorities or [..] create a new business inside an existing unit."

"Using the road map [of the business model journey] as a guiding principle allows leaders to correctly categorize the innovation opportunities that appear before them in terms of their fit with their existing business model's priorities"

"To achieve successful business model innovation, focus on creating new business models, rather than changing existing ones"

"When a new business is housed within an existing unit, it must adopt the priorities of the existing business to secure funding; in doing so, the new business often survives in name but disappears in effect"

"When identifying new market opportunities, it's critical that you begin with a focus on the customer's job to be done, rather than on your company's capabilities"

THEORIES OF INNOVATION AND DISRUPTION

- Disruptive innovation
- Business model innovation
- Open innovation
- Reverse innovation
- Blue ocean or value innovation

They suggest alternate options such as sourcing, an ecosystem of partnerships, and mergers and acquisitions for market creating innovations and new businesses: "Another approach is to create incentives and channels for entrepreneurs to bring new and, in some cases, potentially disruptive business models to you, either as potential customers or as ecosystem partners". This returns one to Satell's (2017) typology. It can help to differentiate and locate, for example, mavericks and skunk work projects, research and development labs, design thinking, and innovation labs.

OPEN INNOVATION

Open innovation is an example of the shifts in the locus of innovation. As noted earlier, previously innovation was circumscribed to in-house closed spaces. Research and development was segregated from the firm's main operations and infrastructure, and it was closed to guard the intellectual capital and patents from competitors to maintain competitor intelligence and competitive advantage (Bogers, Chesbrough & Moedas, 2018; Crainer et al, 2014a; Chesbrough, 2011; Huston and Sukkab, 2006; Markman, 2012; Osterwalder, Viki, & Pigneur, 2019). However, with the changing world of work, talent, information, competitive dynamics and customer needs firms are needing to explore beyond their organisational boundaries and open up their innovation process. For example, there is the shift in firms from being the leading source (of basic research, discovery, ideas, invention, and products and services) and store of talent to developing capabilities to access, network, curate and co-create. For example, developing access[4] to ideas from suppliers and customers as well as other complementary, adjacent and unrelated firms, partners, incubators and ventures.

Consider Proctor and Gamble's (P&G) strategy in 2000 to reposition and reinvent their internal research and development department as **Connect + Develop**. This open innovation model with crowdsourcing is not to be confused with outsourcing of innovation.

> "Most companies are still clinging to what we call the *invention model, centered on a bricks-and-mortar R&D infrastructure* and the idea that their innovation must principally *reside within their own four walls*. To be sure, these companies are increasingly trying to buttress their laboring (sic) R&D departments with acquisitions, alliances, licensing, and selective innovation outsourcing. And they're launching Skunk Works, improving collaboration between marketing and R&D, tightening go-to-market criteria, and strengthening product portfolio management. But these are *incremental changes* [in their value chain], bandages on a broken model."

Here is a brief *video on open innovation* and Chesbrough's *introduction*

"We discovered that important innovation was increasingly being done at *small and midsize entrepreneurial companies*. Even *individuals* were eager to license and sell their intellectual property. *University and government labs* had become more interested in forming industry partnerships, and they were hungry for ways to monetize their research. The *Internet* had opened up access to talent markets throughout the world." (italics added, Huston et al, 2006)

In the open innovation model one can see the significance of thinking about ecosystems. It focuses the firm's attention on understanding its environment and how it needs to develop its ecosystems, and the management of both outside-in and inside-out perspectives and relations. What informs the firm's development of its ecosystem? Bogers et al (2018) suggest that the firm's business model sets the requirements for the development of its ecosystem. For example, the business model sets the requirements for the platforms, architectures and systems that enable the coming together of internal and external ideas. One can also draw on the insights from the previous section on the journey of business model innovation from market-creating, sustaining to efficiency innovations.

THEORIES OF INNOVATION AND DISRUPTION

- Disruptive innovation
- Business model innovation
- Open innovation
- Reverse innovation
- Blue ocean or value innovation

Consider the ***report on open innovation and digital collaboration in South Africa***; and a critical review of the ***collaboration within the SA tech ecosystem***.

Boger discusses the above in more detail in his presentation on open innovation

4. See SAPBB fact sheet (2020, number 1) on ***HR's place in 4IR*** for a discussion on the access economy.

REVERSE INNOVATION

Reverse innovation is another example of the shifts in the locus of innovation. In this case the shift is from the predominant pattern of innovation and product launches being centred and located solely in American and European multi-national headquarters in developed economies, which then 'trickles down' to developing economies. It is the acknowledgement and fostering of the potential for innovation in developing economies. Govindarajan developed the concept of reverse innovation during his tenure at General Electric (Immelt, Govindarajan & Trimble, 2009). He cites in the HBR article he collaborated on, *'How GE is Disrupting Itself'*, the case of how the development of a low cost portable ultrasound machine emerged from an developing economy; and then was later launched in developed economies retaining the low cost advantage.

This means the reversal of the dominant trend where products are designed, produced and marketed in developed economies and later launched in developing economies with some tweaking in features (such as defeaturing) or modification in performance. Govindarajan argues that reverse innovation means localising the value chain from innovation, sourcing, product development to strategic marketing capability for example (cited in Crainer et al, 2014a). It also can create new markets in developed economies, and in this way can be a disruptive innovation in developing and developed economies as described by Christensen. Therefore, reverse innovation is also known as trickle-up innovation. However, it requires the multinational's headquarters to recognise its own blind spots. These blind spots stem from their previous product successes in developed markets and attendant firm competence and mindsets embedded within the existing product, processes and management. This means that past successes can narrow one's field of vision and bound one's strategic perspective and mindset. In the next section, on blue ocean innovation, strategic mindsets is discussed further.

Consider Govindarajan's differentiation between reverse innovation and glocalisation and how "poor countries will become R&D labs for breakthrough innovations in diverse fields" in this *interview* and his *Ted Talk*.
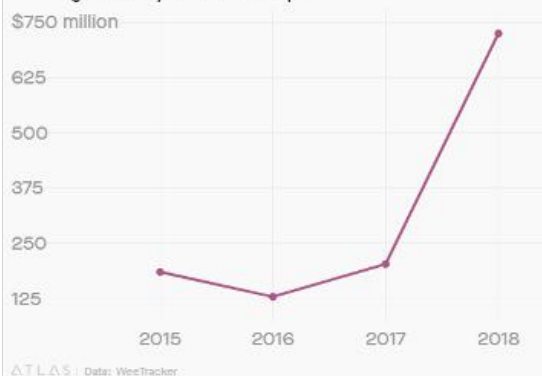
"Local companies have deep understanding of local customer problems. But multinationals have deep global capabilities. Both have different strengths to excel at reverse innovation. Perhaps strategic alliances between local players and multinationals might hold the key"

"Multinationals must develop a deeper understanding of local customer problems. Local companies must build global brands and global distribution capabilities. The biggest hurdle for reverse innovation is not technology or budgetary constraints. It is **organizational and mindset-based**" (bold added)

Funding raised by African startups

WEF (WeeTracker acknowledged as source)

Alongside reverse innovation and glocalisation another concept one could also explore is that of **technological leapfrogging by developing economies**. It refers to the "bypassing [of] intermediate stages of technology through which countries have historically passed during the development process" (**UNCTAD**, 2018a, p84). This means developing economies do not necessarily need to replicate the developmental paths and obsolete technologies of developed economies. They can adopt and/or develop leapfrogging technologies (**UNCTAD**, 2018b). Relatedly, see the adjacent figure on the accelerating increase in start-up funding in Africa.

BLUE OCEAN OR VALUE INNOVATION

Kim et al draw attention to how firms and its management frame strategic possibilities and the consequences thereof. They argue that strategy and innovation cannot be separated. They focus on the strategic perspective/mindset and the strategic moves of the firm's management, that is, strategy formulation and execution (Crainer and Dearlove, 2014b). The strategic perspective/ mindset refers to the nature of the firm's assumptions, questions and approach regarding the industry, market and its strategic positioning. Kim et al identify two possible set of management assumptions, questions and approaches, which they term as blue and red ocean perspectives. The blue ocean perspective, as the name implies, refers to an openness to question the boundaries and structure of existing industries and firms. These are not assumed to be a fixed and given reality that sets unalterable parameters within which companies compete and engage in strategic moves. The industry and firm boundaries and structure are viewed as a constructed reality and, therefore, these can be shaped by firms themselves. Thus, it is termed as a reconstructionist approach where strategy shapes the industry and market structure and leads to market creating moves. It contrasts with the structuralist or environmental deterministic approach of the red ocean perspective.

The red ocean perspective and its strategic moves are circumscribed within the current industry status quo and its attendant brutal and 'bloody' competitive dynamics. Hence, the red descriptor in red ocean perspective. It means the framing of strategic possibilities within the status quo and leads to market *competing moves* rather than market *creating moves*. The red ocean perspective is informed by a structuralist approach, which sees the environment as setting the industry's structure and boundaries, which then determines the firm's strategy. As Kim et al (2017) state it assumes that the industry structure and boundary is fixed and "*determines organisations' conduct or strategy,* which in turn *impacts performance*" (italics added, p293). They cite Michael Porter's work on competitive advantage as an example of the structuralist approach.
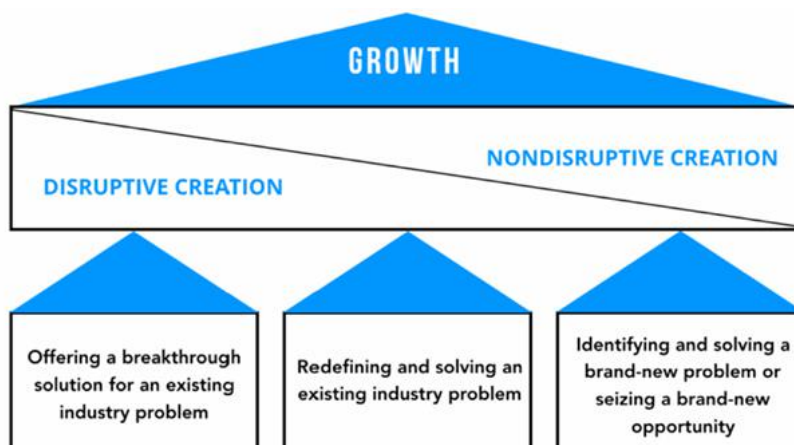
As strategy and innovation cannot be separated, Kim et al argue that value and innovation cannot be separated. Blue ocean strategy and shifts leads to *value innovation*. Kim states that value "without innovation can include value *creation* that simply improves the buyer's existing benefits"; while innovation "without *value* can be too technology-driven" (italics added, quoted in Crainer et al, 2014b, p 86). Technology innovation by itself doesn't necessarily lead to value creation or value innovation. Kim et al (2017) use the analogy of egg laying and hatching as an analogy to explain this:

> "While technology innovators may lay extraordinary eggs, they seldom the ones who ultimately hatch them [that is, commercialise it and present it as value for buyers].
> [H]istory shows that egg laying and hatching are often performed by different players"

Kim et al (2017) suggest that technology innovation, whether superior technology in the case of creative destruction or inferior technology in the case of disruptive innovation, leads to displacement. That is, the displacement "of existing players and markets" (p31) as well as employment and employees. Thus, they see disruption as displacement even if it is market creating. They incorporate creative destruction and disruptive innovation in a useful model that differentiates disruptive and non-disruptive creation. This means that blue ocean shifts can lead to disruptive creation, non-disruptive creation or both. The authors' figure below succinctly illustrates their growth model of market creating strategies.

Kim and Mauborgne: Growth model of market creating strategy

THEORIES OF INNOVATION AND DISRUPTION

- Disruptive innovation
- Business model innovation
- Open innovation
- Reverse innovation
- Blue ocean or value innovation

Markides makes a similar argument to Kim et al on laying and hatching 'eggs' (Crianer et al, 2014a). Markides introduces the concept of *'fast seconds'*, which are second rather than **first movers** (or first to market with a new product or service). He argues that the "skills, mindsets, and competencies needed for discovery and invention not only are different from those need for commercialization [..] but also conflict with the needed characteristics" (quoted in Crainer et al, 2014a, p133). He concludes that "firms that are good at invention are unlikely to be good at commercialization and vice versa" (ibid). Thus, he suggests that established companies (with their established skills, mindsets and competencies) should be kept separate or apart from entrepreneurial ones. The degree of separation or divide between the established and the innovative is what needs to be determined. One could think of a continuum with absolute separation at one end of the continuum and integration on the other. Markides in an earlier publication provides a helpful table to think through the degree of separation or integration.

Markides and Charitou (2004): Competing with dual business models - A contingency approach

Separation and integration are not just structural. It also involves culture, mindsets, skills and core competence. The key question with separation and integration is the relationship between the established/existing and the entrepreneurial/innovative. Consider Satell's (2017) typology that was presented earlier and how established firms could organise, collaborate with or host mavericks, skunk work projects, research and development labs, and innovation labs. Is the concept of **ambidextrous organisations** a possible solution that goes beyond the binary of separation and integration? Kim et al (2017) provide some nuance to the question. They differentiate the firm's product and/or service offerings as pioneers (value innovation), migrators (value improvement) and settlers (value imitation). Can these be used by firms to help decide how they could organise, collaborate or host innovators? Do these require different HR decisions and practices?

THE FIRM AND HR DILEMMAS

Drawing on the above discussions and the previous fact sheet on HR's place in 4IR, the sections that follow below map out the dilemmas that firms and their HR need to grapple with and manage at different levels. For the purposes of this fact sheet the levels are grouped as follows: individual and team level; firm level; and industry and national level.

THE FIRM AND HR DILEMMAS

- Individual and team level
- Firm level
- Industry and national level

INDIVIDUAL AND TEAM LEVEL

For convenience and purpose of this fact sheet the distinction between red and blue ocean mindset and strategic moves is utilised to map the individual and team level. The table is organised along the popular alliteration of head, heart and hands[5] that is utilised in the leadership literature, which is also described as knowing, being and doing respectively. The table outlines the mindsets and risks entailed; emotional intelligence aspects and related risks; and the impact of developed expertise or experimentation. Links are provided to further explore concepts introduced in the section. It should be noted that, in reality, there may not be such a neat dichotomy of red and blue teams as described below. The dichotomy is presented as a heuristic tool only. It can help to think through the implications for HR business alignment as set out in the SABPP HR Standards; and identify the Strategic HRM, talent management and HR risks implications. The table in the next section draws out the Strategic HRM implications further.

RED TEAM			
Head	Perspective and cognition	Red ocean perspective; *Fixed mindset*[6]	Structuralist approach to industry and market
		Cognitive closure, *cognitive bias* and *cognitive dissonance* risk in relation to innovation and disruption	
Heart	Emotional dynamics and intelligence	*Need for certainty*	Risk aversion
		Resilience for red oceans	*Grit* and resourcefulness in red oceans
		Persecutory anxiety about novelty →*Amygdala hijack*	Vigilance for 'attacks' on the status quo
Hands	Experimentation	Commercialisation and scaling competence	Previous success provides fast, replicable template
		Consolidated behavioural repertoire	Habitual patterns, reliance on previous successes, and fixed solution sets

BLUE TEAM			
Head	Perspective and cognition	Blue ocean perspective; *Growth mindset*	Structuralist approach to industry and market
		False growth mindset risk	*Reality distortion field (Steve Jobs)*; cognitive closure, bias and dissonance risk in relation to commercialisation and customer adoption and value
Heart	Emotional dynamics and intelligence	Ambiguity tolerance	Open and adaptable to uncertainty; risk seeking and taking
		Resilience for blue oceans	Grit and resourcefulness in blue oceans
		Anxiety about not meeting expectations	Aversion → retreat and escape to ideation and brainstorming
		Mindfulness and *flow*	Reflective awareness and presence
Hands	Experimentation	Continuously developing behavioural repertoire	Searching, discovering and learning from failure
		Commercialising and scaling skills not prioritised	Failure to anticipate requirements and steep learning curve for commercialisation and scaling up

5. See the *BCG article* for a discussion of head, heart and hands in relation to transformation.

6. Carol Dweck differentiates fixed and growth mindset, which refers to one's beliefs of one's abilities and consequentially how one responds to challenges. In this *interview* she discusses the differences between the two. As the descriptor fixed in fixed mindset suggests the belief with this mindset is that one's abilities are fixed and predetermined. Whereas a growth mindset is where one believes one's talent and abilities can be developed. Dweck also discusses in the *interview* the 'false growth mindset' that stems from simplification and misunderstanding of the mindsets.

FIRM LEVEL

The below table provides a heuristic framework for thinking through the relation between strategy, value and innovation, and the attendant dilemmas and decisions on capital allocation and HR approach. It then discusses and illustrates Yeung and Ulrich's (2019) argument for reinventing firms as a market-oriented ecosystem. Therein they present the use of talent platforms along with other partnerships. The suggestion of talent platform partnerships has been added to the table below to locate it in relation to other considerations.
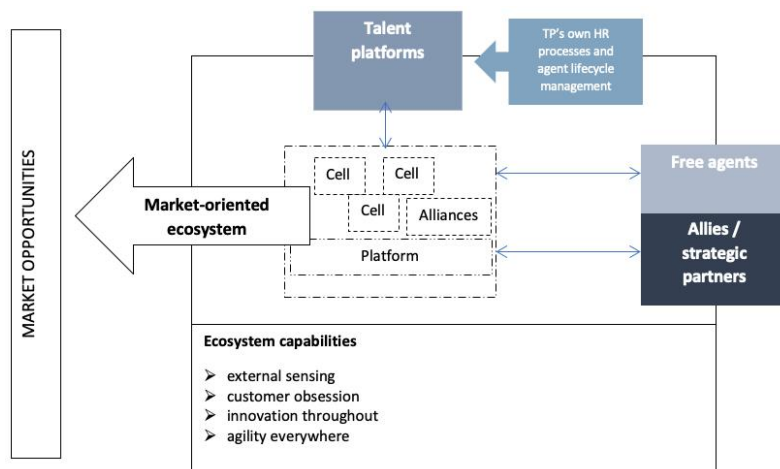
FIRM STRATEGY, VALUE AND INNOVATION	Blue ocean - market creating		Red ocean - market competing	
	Nondisruptive creation	Disruptive creation		
	Business model journey[7] from market creating → sustaining → efficiency innovation			
	Reverse & open innovation; leapfrogging		Replication; imitation	
	Fast mover or fast second strategic choice			
FIRM CAPITAL ALLOCATION	*Exploration* (search, discovery, experimentation and invention)		*Exploitation* (sustaining or incremental innovation and efficiency)	
FIRM HR APPROACH	Flexibility[8]		Fit - external alignment[9]	
			Fit - internal alignment	
	HR disrupted[10]		Best practices	
	Differentiate HR bundles of practices for pioneers, migrators and settlers in the firm. Enable **blue ocean teams**.		Traditional talent management and high potentials	
	Degree and nature of separation and integration of entrepreneurial/ innovative and established/ existing; Degree and nature of **organisational ambidexterity**			
	Partnerships with talent platforms, allies and strategic role players			

As noted in the previous fact sheet on HR's place in 4IR, Storey, Wright and Ulrich (2019) suggest the need for both fit and flexibility/agility of HR systems within the current business and competitive landscape: "firms must be *efficient* [..] in their current operations, while also being able to *transform* their products, operations, and workforce to meet new competitive challenges as they arrive" (p71). This suggests that organisations need to be ambidextrous; that is, being capable of exploitation and exploration. In the previous fact sheet the theme of reinvention was also discussed. The key concept that emerges from the discussions on reinvention is that of a firm's ecosystem.

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7. One can contextualise this journey within the evolving macro-level cycles such as technology's S curves, adoption and hype lifecycles as well as the product, business and economic lifecycles, which are referenced in the fact sheet ***HR's place in 4IR***.

8. See the previous fact sheet on ***HR's place in 4IR***.

9. See the previous fact sheet on ***HR's place in 4IR***.

10. See the previous fact sheet on ***HR's place in 4IR***.

Yeung et al (2019) argue that their framework of market-oriented ecosystem (instead of the traditional stand-alone, closed firm) provides a more integrated approach than other descriptions/ prescriptions of lean, agile, exponential, horizontal integration, and boundaryless organisations. It has similarities with the previous discussion on open innovation as both question the closed model of the firm. The figure below provides an illustration of the framework where the firm comprises a platform, business teams or cells, and relationships with allies. The platform supports the cells by providing support, common activities and resources, and a means to share ideas, knowledge, talent and resources. There are three types of platforms depending on the nature of the business and the business cycle: core business, technology and functional platforms. The allies serve as strategic partners that complement the platform and/or cells. Along with allies the firm or rather market-oriented ecosystem partners with talent platforms and 'free agents' directly. The capabilities of the ecosystem as a whole are crucial and through which strategic agility is realised. The figure lists the four ecosystem capabilities.

THE FIRM AND HR DILEMMAS

- Individual and team level
- Firm level
- Industry and national level

INDUSTRY AND NATIONAL LEVEL

One can extend Yeung et al's (2019) argument for the reinvention of the firm as a market-oriented ecosystem and suggest that this ecosystem reinvents industries and national systems. This is in line with Kim et al's (2017) description of a reconstructionist approach (where strategy shapes the industry structure) and the discussion on open innovation. This means seeing industries and the national systems as ecosystems that need to be developed and reinvented continuously. Reverse innovation and leapfrogging presents the possibility to reimagine development and growth in developing economies and the industries therein.

In South Africa, at the national and city levels, for example, there are many forums, commissions, institutions such as universities, and networks of incubators, innovation labs and start-ups that firms can tap into. Satell's typology (2017), which was presented previously, provides a helpful framework to organise one's thinking about the different vehicles for innovation. Below is a sample of the national ecosystem dedicated to innovation, disruption and 4IR.

4IR	*Presidential commission on 4IR*; *NEDLAC research*; *Parliamentary colloquiums*	*4IRSA* platform of universities and corporates	Individual university initiatives such as *Wits* and *UJ*	*HSRC dialogues and policy research*; *CSIR affiliate to WEF C4IR Network*
INNOVATION HUBS, INCUBATORS AND ECOSYSTEM	*Technology Innovation Agency*; *National Advisory Council on Innovation*	*Southern African Research & Innovation Management Association*	*Wits University's Tshimologong Innovation Precinct, Centre for Software Engineering, Rail Lab*	*UNISA Knowledge for Innovation*; *National Electronic Media Institute of South Africa*
	MTN Mobile Intelligence Lab at Stellenbosch University	*Geekulcha – a youth focused tech ecosystem builder*	*UCT's Solution Space – a 'third space' where academia meets industry and builds ecosystem*	*Gauteng Province Innovation Hub*

CONCLUSION

Innovation and disruption are complex phenomenon that are continuously evolving. They cannot be seen as singular events; and approached with a 'one size fits all' response or solution. They require definitional and conceptual rigour and clarity to tease out the different forms and types and how they evolve over time. The fact sheet presents various perspectives to provide insight into the innovation and disruption landscapes and offers a launch pad from which to navigate the different viewpoints and think through and build one's ecosystem. It is not meant to be an exhaustive list of the available types, typologies and theories.

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May	BUILDING ORGANISATIONAL CAPABILITIES
June	CHANGE MANAGEMENT
July	INNOVATION IN HR
August	HR TECHNOLOGY
September	HR IN BUSINESS SUSTAINABILITY
October	THE LEARNING & DEVELOPMENT LANDSCAPE IN SA

2017

February	MODERN SLAVERY
March	PENSION LAW FOR EMPLOYERS
April	**THE GAME CHANGER:** ROLE OF HR
May	HR GOVERNANCE
June	INTEGRATING SKILLS DEVELOPMENT, EMPLOYMENT EQUITY AND B-BBEE TRANSFORMATION
July	STRESS MANAGEMENT
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September	HOW CEOs AND CHROs CAN USE THE SABPP TO CREATE EXCELLENCE IN HR MANAGEMENT
October	PEOPLE WITH DISABILITIES
November	RETRENCHMENT
December	THE SOUTH AFRICAN LEADERSHIP STANDARD

INNOVATION AND DISRUPTION DILEMMAS FOR FIRMS AND THEIR HR FUNCTIONS

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PREVIOUS EDITIONS OF THE FACT SHEET

2018

Month	Topic
February	STRATEGIC HUMAN RESOURCE MANAGEMENT
March	BULLYING IN THE WORKPLACE
April	LISTERIOSIS AND FOOD SAFETY IN THE WORKPLACE
May	FLEXIBLE WORK PRACTICES
June	YOUTH EMPLOYMENT SERVICE
July	HR PRACTITIONERS AS EX-OFFICIO COMMISSIONERS OF OATHS
August	NATIONAL MINIMUM WAGE (NMW)
September	EMPLOYEE RETRENCHMENT
October	THE FUTURE OF YOUTH IN SOUTH AFRICA
November	**BOARD EXAMINATIONS:** A SIGNIFICANT STEP FORWARD FOR HR PROFESSIONALISATION
December	**CHRONIC DISEASE MANAGEMENT:** CANCER IN THE WORK PLACE

2019

Month	Topic
February	EMPLOYER VALUE PROPOSITION
March	QUALITY COUNCIL FOR TRADES AND OCCUPATIONS
April	RECENT TRENDS ON REMUNERATION GOVERNANCE
May	THE PROTECTED DISCLOSURES ACT
June	HR SERVICE DELIVERY MODELS
July	CREATING A SPEAK UP CULTURE AT WORK
August	JOB PROFILES
September	**ETHICS HOTLINE MANAGEMENT:** BEST PRACTICE GUIDE FOR SOUTH AFRICAN EMPLOYERS
October	**DISABILITY AND EMPLOYMENT:** THE SABPP DISABILITY PROFESSIONAL PRACTICE STANDARD
November	**FACING THE FOURTH INDUSTRIAL REVOLUTION:** WHAT ARE SOUTH AFRICA'S CONSTRAINTS?
December	NATIONAL QUALIFICATIONS FRAMEWORK ACT AND THE 2019 AMENDMENT ACT

INNOVATION AND DISRUPTION DILEMMAS FOR FIRMS AND THEIR HR FUNCTIONS