

Innovation, Disruption, or Evolution in the Legal World

Welcome to the Jungle¹

TABEL OF CONTENTS

- I. **Get in the Ring** 292
- II. **Invention, Innovation, Diffusion, and Creative Destruction** 293
- III. **The Dynamics of Innovation** 293
- IV. **Evolution vs Disruption** 297
- V. **Entering the Age of Hyper-Evolution** 301
- VI. **Offerings and Organisations will be re-shaped by Changing Demand** 304
- VII. **Bibliography** 311
 - A. Hard Copy Sources 311
 - B. Online Sources 312
 - C. Other Sources 314

1 *Guns 'N' Roses* are the all-time favourite band of both authors of this chapter and their music has forever influenced and enriched our lives. As such it won't come as a surprise that we have chosen the title of the opening track of their seminal 1987 debut album «Appetite for Destruction» as the fitting subtitle for this chapter and «Get in the Ring» off their 1991 masterpiece «Use Your Illusion II» as the first headline in this chapter. Also the font used on the pages segmenting this book into its three parts was designed to echo and hence pay tribute to the cover of the Use Your Illusion I and II albums which itself was based on the fresco «La scuola di Atene» in the Stanze di Raffaello in the Vatican by Italian Renaissance artist *Raffaello Sanzio da Urbino* (known as *Raphael*). This entire chapter is dedicated to the memory of the late Professor *Richard John Artley* (1963–2013) who first inspired and tutored us on the fascinating subjects of innovation and disruption. The exciting journey continues and his legacy will live on.

I. Get in the Ring

Fuelled by accelerating digitization, increased global interconnectivity, and transparency (coupled with shifting overarching political agendas, altered user expectations, and technological advances), the legal industry faces unprecedented change across its entire value chain. Within this quadriga, the following two forces are the chief drivers of the chariot of change: The first driver is the **emergence of stable technological solution-ecosystems** which will string together the current impressive but isolated technological breakthroughs. These ecosystems offers both vertical, purpose-built applications and horizontal platform solutions. What initially had appeal only for an early-adopter niche audience will become acceptable for those commanding significant market share. The second driver is the manifestation of **future needs and expectations of the demand-side**² which as we have observed once before with the initial rise of General Counsels may lead to dramatic re-drawing of lines and re-shaping of the industry as outlined in other chapters in this book.³

But is it really disruption we will see or evolution? The importance of the advent of new technological solutions—especially as we enter the age of exponential technologies with their prospect of hyper-acceleration of change—supports the mantra that the legal industry will face disruption. This would eventually mean the passing on of dominance from established players to the successful promoters of new technology-based dominant designs as heralded by many LegalTech advocates. To try to determine the answer in an informed way, it is useful to first revisit the underlying key concepts of invention, innovation, diffusion, and disruption. Therefore, the first three sections in this chapter provide a summary of the essential research and theory by leaders in the field including *Joseph Schumpeter*, *James Utterback*, *Everett Rogers* and *Michael Porter*. Utilizing their theories on the trajectory of innovation, the last two sections then provide some predictions about how the law marketplace will have to adapt and evolve in the future. This chapter concludes on a positive note: Although legal professionals may need to put on «new suits», the future represents an enormous opportunity to reinvent what it means to be a lawyer and how we add value for our clients.

2 Guenther Dobrauz-Saldapenna, *Towards an agoge for tomorrow's legal professionals*, in MINUTES OF THE CONFERENCE ON THE FUTURE OF LEGAL SERVICES IN ST. GALLEN (Leo Staub ed., 2018) at 17.

3 See the excellent chapters by *Mari Sako* («The Changing Role of General Counsels») and *David Wilkins & María José Esteban Ferrer* («Taking the «Alternative» out of Alternative Legal Service Providers») in this book.

II. Invention, Innovation, Diffusion, and Creative Destruction

The starting point is to distinguish «invention»—the *generation* of ideas or concepts for new products or processes—from «innovation»—the *translation* of such new ideas into marketable products or processes—and from «diffusion»—the widespread *adoption* of these products or processes in the market as Austrian economist *Joseph Schumpeter* first conceptually established.⁴ It is also essential to remember *Schumpeter's* seminal concept of «creative destruction»—the process of industrial transformation through radical innovation.⁵ «creative destruction»—the introduction of revolutionary products and services by successful entrepreneurs—is the fundamental force driving sustained long-term, economic growth, but also destroys the power of established organisations in the short term.⁶

III. The Dynamics of Innovation

When it comes to innovation, it is by now well established that this usually arises and follows a certain lifecycle, which has been expertly summarized by *James Utterback* in his excellent book «*Mastering the Dynamics of Innovation*».⁷ He points out that the rate of innovation in a product class or an industry is usually highest during its initial, formative phase. During this «fluid phase», as he calls it, a great deal of experimentation with product design and operational characteristics takes place amongst competitors, and much less attention is given to the processes by which products are made. As a conse-

4 It should be noted that this taxonomy for which Schumpeter provided the conceptual basis in his 1939 book «*Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process*» and in later articles such as «*The Creative Response in Economic History*» (1947) and which is today often referred to as «Schumpeter Trilogy» did not specifically articulate the «Invention-Innovation-Diffusion» distinction and was largely elaborated by later writers based and expanding on his thinking. See for example PAUL STONEMAN, *THE HANDBOOK OF ECONOMICS OF INNOVATION AND TECHNOLOGY CHANGE* (Wiley-Blackwell, 1995) and Perihan Hazel Kaya, *Joseph A. Schumpeter's perspective on innovation*, 3 (8) INTERNATIONAL JOURNAL OF ECONOMIC, COMMERCE AND MANAGEMENT 25–37 (2015).

5 JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* (HarperCollins, 1942) and JOSEPH SCHUMPETER, *BUSINESS CYCLES: A THEORETICAL, HISTORICAL AND STATISTICAL ANALYSIS OF THE CAPITALIST PROCESS* (McGraw Hill, 1939).

6 Schumpeter, *id.*

7 JAMES M UTTERBACK, *MASTERING THE DYNAMICS OF INNOVATION. HOW COMPANIES CAN SEIZE OPPORTUNITIES IN THE FACE OF TECHNOLOGICAL CHANGE* (Harvard Business Review Press, 1994 [citing 1996 paperback edition]).

quence, the rate of process innovation is significantly less rapid at this stage.⁸ During this formative period of a new product, the processes used to produce it are usually crude, inefficient, and based on a mixture of skilled labour and general-purpose machinery and tools.⁹ At first, an innovation may be almost entirely a combination of design elements tried out in earlier uses or prototypes. Even disruptive innovations (more on that later), although typically originating from outside of the incumbent industry, usually arise in the context of and resembling the technology, products, or processes they will ultimately replace and hence, at first, are not easily distinguishable. For example, the first cars looked very much like the horse carriages which they shortly replaced.¹⁰ According to *Utterback*, it is fairly common in new industries of particular assembled products that a pioneering firm gets the ball rolling with its initial product, a growing market begins to take shape around it, and new competitors are inspired to enter and either grow the market further or take a chunk of it with their own product versions.¹¹ No firm has a lock on the market at this early stage and no firm's product is really perfected. No single firm has yet mastered the process of manufacturing, or achieved unassailable control of the distribution channels. At this stage of the product's evolution, both producers and customers are experimenting. Within this rich mixture of experimentation and competition during the «fluid phase» and as the market grows, greater emphasis is usually placed on the development of components tailored especially for the product itself. Ultimately, these may be synthesized into a model that includes most features and meets most user requirements.¹² Eventually, some center of gravity forms in the shape of a *dominant design*—yet another term coined by *Utterback* together with *Abernathy*.¹³

A dominant design has the effect of enforcing or encouraging standardization so that production or other complementary economies can be sought.¹⁴ Also, once the dominant design emerges, the basis of competition changes radically as the industry enters a «transitional phase» in which the major *product* innovation slows down and the rate of major *process* innovations speeds up.¹⁵ A dominant design radically reduces the number of performance requirements to be met by a product by making many of those requirements implicit

8 Utterback, *supra* note 7, at xviii.

9 Utterback, *supra* note 7, at 82.

10 Appetite For Disruption, *Chapter 01 | The Dynamics of Innovation & Disruption*, YouTube (Oct. 14, 2018), <https://www.youtube.com/watch?v=5BvmWcFHIW0> (last visited Feb. 4, 2019).

11 Utterback, *supra* note 7, at 23.

12 Utterback, *supra* note 7, at 30.

13 James M Utterback & William J Abernathy, *A Dynamic Model of Product and Process Innovation*, 3 (6) OMEGA, 639–656 (1975).

14 Utterback, *supra* note 7, at 32.

15 Utterback, *supra* note 7, at xviii.

in the design itself.¹⁶ Hence, as the form of the product rapidly becomes settled, the pace of innovation in the way it is produced quickens. Competition begins to take place on the basis of cost and scale as well as of product performance. A firm in possession of collateral assets such as market channels, brand image, and customers switching costs will have some advantage over its competitors in terms of enforcing its product as the dominant design.¹⁷ In the ensuing new era of competition, the linkage of product technologies with manufacturing process, corporate organization and strategy, and the structure and dynamics of an industry is essential. Interestingly, at least with respect to consumer products, narrowing the difference between the outward appearances of a new technology and those of the old and familiar can help in creating market success.¹⁸ Before long, the competitive landscape changes from one characterized by many firms and many unique designs, to one of upwards consolidation with only a few firms with similar product designs surviving.¹⁹ At this point, product variety begins to give way to standard designs that have either proven themselves in the marketplace as the best form for satisfying user needs, or designs that have been dictated by accepted standards, by legal or regulatory constraints.²⁰

In the financial services world, or indeed in most regulated industries, the dominant design is chiefly created by regulation.²¹ A good example for this is the Swiss investment funds market. Although Switzerland is one of the most important markets for the distribution of funds, it has not managed to become a significant domicile for retail or alternative funds. Indeed, even the Swiss domestic retail funds market is today dominated by funds imported from the EU. One key reason for this is that Swiss funds although more or less identical to their EU peers do not qualify as UCITS²² or AIFMD²³ funds—the two regulatory dominant designs for retail and alternative investment funds in Europe respectively—and hence cannot be easily offered to the harmonized European market.²⁴

Some industries then, according to *Utterback*, enter a «specific phase» in which the rate of major innovation dwindles for both product and process.²⁵

16 *Utterback, supra* note 7, at 25.

17 *Utterback, supra* note 7, at 27.

18 *Utterback, supra* note 7, at 74.

19 *Utterback, supra* note 7, at 87 et seq.

20 *Utterback, supra* note 7, at 28.

21 Guenther Dobrauz-Saldapenna & Dieter Wirth, *Five propositions for future success of Switzerland as a Financial Centre*, GLOBAL BANKING & FINANCIAL POLICY REVIEW 2015/16 173–179 (2016).

22 Undertakings for Collective Investment in Transferable Securities Directive.

23 Alternative Investment Fund Managers Directive.

24 Dobrauz & Wirth, *supra* note 21, at 173–179.

25 *Utterback, supra* note 7, at xviii.

These industries become extremely focused on cost, volume, and capacity. Product and process innovation only appears in small, incremental steps. The model also applies in the case of non-assembled products but in slightly altered form. When compared to process improvements, in the production of complex, assembled products, process innovations in non-assembled products have a more profound impact on productivity and costs. Also process innovations in this category are more likely to emerge from within an industry. Each new wave of innovation has its *fluid*, *transitional*, and *specific* phase.²⁶ Typically, the number of firms participating in later waves is lower.²⁷ The reason for this drop-off in the number of competing firms in later waves is no doubt related to the fact that markets are often well defined by the first wave of innovation. It is also related to the fact that the established firms develop the distribution channels and production facilities to serve these markets, limiting the number of possible firms that can reform the industry—even with superior technology. Thus, the number of firms participating in later waves is lower, unless the new wave of innovation substantially broadens or alters the market, or is indeed disruptive.²⁸

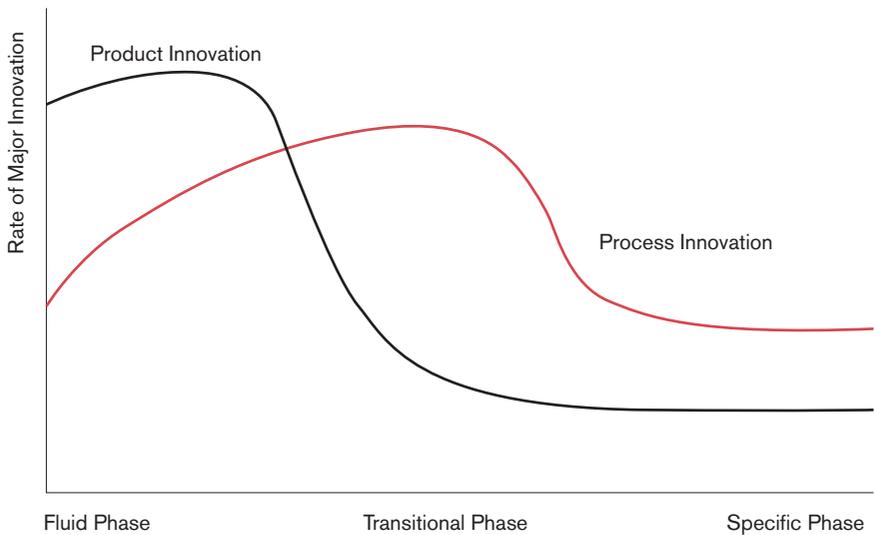


Exhibit 1: «The Dynamics of Innovation» [Source: Utterback xvii (1994)].

26 Utterback, *supra* note 7, at 99.

27 Utterback, *supra* note 7, at 100.

28 Utterback, *supra* note 7, at 101.

IV. Evolution vs Disruption

We have established that the dominant design is the one solution which wins the allegiance of the marketplace, the one that competitors and innovators must adhere to if they hope to command significant market following.²⁹ It embodies the requirements of many classes of users of a product, even though it may not meet the needs of a particular class to quite the same extent as a customized design would. It is a so-called satisfier of many in terms of the interplay of technological possibilities and market choices, instead of an optimizer for a few.³⁰ As such it is also the underlying trigger for the change in addressable customer base from earlier adopters to more mass markets.

But what happens beyond a specific consolidated wave? What about the sequence of such waves and the difference between evolution and disruption? This is probably best explained by looking at the unfolding dynamic from the perspective of diffusion or adoption of innovation. It was *Everett Rogers* who following earlier work by *Ryan and Gross*³¹ stated in his book «*Diffusion of Innovations*»³² that, based on bell-curve mathematics, adopters of any new innovation can be categorized as follows:

- **Innovators:** 2.5%;
- **Early adopters:**³³ 13.5%;
- **Early majority:** 34%;
- **Late majority:** 34%; and,
- **Laggards:** 16%.

Rogers' approach was overly mathematical (and not 100% supported by his own or in fact any later data),³⁴ but he inspired uptake over time to be conventionally represented, quantitatively, by two types of graphs. The first, the «Sales Curve», which shows product sales over time, and secondly the «Market Penetration Curve», or «S-curve». The S-curve is the cumulative integral of the bell curve. It is slow at the start, more rapid as adoption increases, then levelling off until only a small percentage of laggards have not adopted. For the majority of products, this shows whether the product is still specialist—having typically not yet sold more than 15% of the total number it is expected

29 Utterback, *supra* note 7, at 24.

30 Utterback, *supra* note 7, at 25.

31 Bryce Ryan & Neal Gross, *Acceptance and diffusion of hybrid corn seed in two Iowa communities*, 1372 RESEARCH BULLETIN 663–708 (1950).

32 EVERETT M ROGERS, *DIFFUSION OF INNOVATIONS* (The Free Press, 2003) at 5.

33 «Early adopters» is a term coined by *Rogers*.

34 GUENTHER DOBRAUZ-SALDAPENNA, *UPTAKE REVISTED* (WVB, 2010) at 10.

to sell within its market—or whether it has become a mainstream product, having sold to typically more than 30% of potential purchasers.³⁵

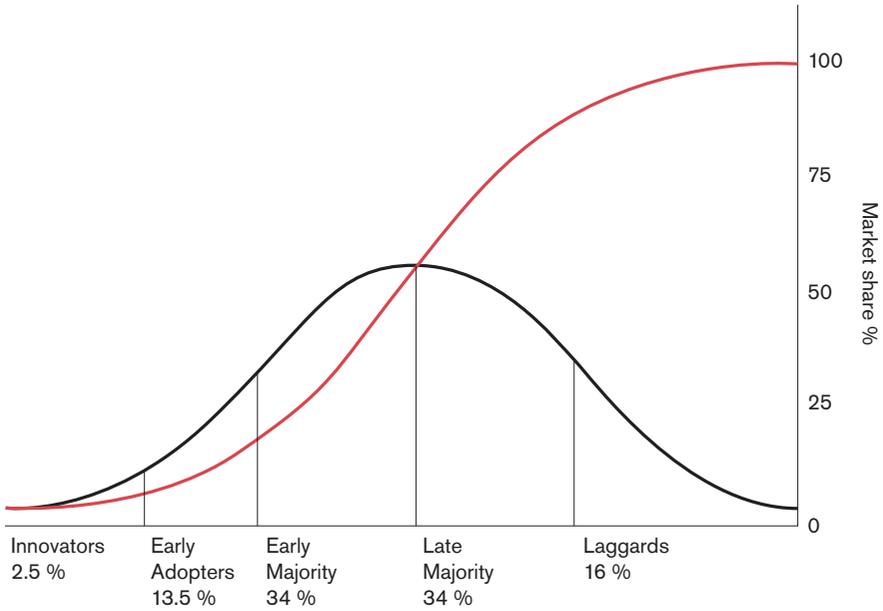


Exhibit 2: «Diffusion of Innovation» [Source: Wikipedia].

This distinction is also elaborated on by *Geoffrey Moore* who refers to the «chasm» between the early adopters of the product (the technology enthusiasts and visionaries) and the early majority (the pragmatists) and how to cross it.³⁶ Also *Clayton Christensen* has done great work looking at the primary uptake of new products, with an initial focus on the perspective of established companies trying to sustain themselves.³⁷ *Christensen* in particular distinguishes between «sustaining innovation» and «disruptive innovation». The former favours incumbents over new entrants as it essentially allows to serve (existing) high value customers or clients in a better way. Disruptive innovation often means that a new methodology and/or technology is used to create a new market or to provide low-cost alternatives to lower value customers or clients. This often allows entrants to overtake established players according to *Chris-*

35 Dobrauz, *Uptake Revisited*, supra note 34, at 12.

36 GEOFFREY A MOORE, *CROSSING THE CHASM. MARKETING AND SELLING DISRUPTIVE PRODUCTS TO MAINSTREAM CUSTOMERS* (HarperCollins Publishers, 1991 [citing 1999 paperback edition]).

37 CLAYTON M CHRISTENSEN, *THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL* (Harvard Business School Press, 1997).

tensen.³⁸ He also correctly identifies corporate structural change as a necessary precursor to new product innovation.³⁹ This is essential as quite often an unhappy by-product of success in one generation of technology is narrowing of focus and vulnerability to competitors championing the next technological generation.⁴⁰ Failing firms, at such stage, are often remarkably creative in defending their entrenched technologies, which often reach unimagined heights of elegance in design and technical performance only when their demise is clearly predictable: Horse carriages were never better or more beautiful than just before they were taken out by cars. Or as probably better put (paraphrasing similar statements to the same end):

«The stone age was not ended by lack of stones but the advent of new technology.»

– Guenther Dobrauz-Saldapenna/*Appetite For Disruption* (2018)⁴¹

It was again *Utterback* who showed that a second generation product, although initially functionally inferior to an established one, can and will overtake it if it raises the potential ceiling of functionality beyond the capabilities of the existing product.⁴² This is because it raises customer expectations of satisfaction, leading to dissatisfaction with the existing product and hence a value gap. This opens up a window of opportunity for a new wave of innovation and restructuring of the given market.⁴³ This then gives rise to the question who—incumbents or newcomers—will be best placed to launch and capture value from such changes. This chiefly depends on whether the innovation is «evolutionary» or «revolutionary», i.e., «disruptive».

The one and only *Michael Porter* stated that most industry-shattering innovations do not spring from the established competitors in an industry but from new firms or from established firms entering a new arena.⁴⁴ This is true even though such radical innovations often are seen to be based on the synthesis of well-known technical information or components (what we would call orthodoxy elements of the original composite S-curve which become sparks of heresy igniting the fire of a new curve). They occur step by step and sometimes exist in embryonic form for many years before they become commercially

38 Christensen, *supra* note 37.

39 *Id.*

40 Utterback, *supra* note 7, at xxiv.

41 *Appetite For Disruption, Chapter 02 | Uptake Revisited—Evolution vs Disruption*, YouTube (Nov. 4, 2018), <https://www.youtube.com/watch?v=Ad2hmsn9qP0&t=584s>.

42 Utterback, *supra* note 7, at 101.

43 Utterback, *supra* note 7, at 159.

44 Michael E Porter, *Technology and Competitive Advantage*, 6 JOURNAL OF BUSINESS STRATEGY 60–78 (1985).

significant. One reason for the lethargy of well-established competitors in a product market undergoing potentially disruptive innovation is that the competitors face increasing constraints from the growing web of relationships that bind product and process change together.⁴⁵ At the start of production of a new product, general-purpose equipment, available components, and high skilled people may suffice to enter the market. As both product and market increase in sophistication, more specialisation is generally required in equipment, components, and skills. Thus change in one element, the product, requires changes throughout the whole system of materials, equipment, methods, and suppliers.⁴⁶ This may make changing much more onerous and costly for the established firm than for the new entrant. Often powerful competitors not only resist innovative threats, but also resist all efforts to understand them, preferring to further entrench their positions in the older products.⁴⁷ This results in a surge of productivity and performance that may take the older technology to unheard-of heights. But in most cases this is a sign of impending death.⁴⁸ What is also not helpful is the result of the typical upwards consolidation of an industry as it goes through the innovation cycle—sizeable and complex entities often run by operational experts who are quite distanced from the underlying technology (or the business of the business whatever that may be). These experts literally look down on new things coming up and at them out of a garage or off the end of lab bench.⁴⁹ At the time an invading or disruptive technology first appears, the established technology generally offers better performance or cost than does the challenger, which is still unperfected. Consider that the initial cars were inferior to horse carriages. The new technology may be viewed objectively as crude, leading to the belief that it will find only limited application.⁵⁰ The performance superiority of the established technology may prevail for quite some time, but if the new technology has real merit, it typically enters a period of rapid improvement—just as the established technology enters a stage of slow innovative improvements. Eventually, the newcomer improves its performance characteristics to the point where they match those of the established technology and rockets past it, still in the midst of a period of rapid improvement.⁵¹ Purveyors of established technologies often respond to an invasion of their product market with redoubled creative efforts that may lead to substantial product improvements based on the same product architecture.⁵² Here, the es-

45 Utterback, *supra* note 7, at xxvii.

46 Utterback, *supra* note 7, at 96.

47 Utterback, *supra* note 7, at 159.

48 Utterback, *supra* note 7, at xxvii.

49 Appetite For Disruption, *supra* note 41.

50 Utterback, *supra* note 7, at 158.

51 Utterback, *id.*

52 Utterback, *supra* note 7, at 159.

tablished product enjoys a brief period of performance improvement. However, the relentless pace of improvement in the new product technology allows the challenger to equal, and then surpass, the established product.⁵³

V. Entering the Age of Hyper-Evolution

We strongly believe that all of the above models apply and are relevant to the legal realm, which obviously is predominantly a service rather than a product world with according stronger emphasis on other, softer factors than technology. It is also important to remember that today the focus of innovation is increasingly abstract as it transcends its previous areas such as technical capability, markets, brand, and processes. Furthermore, such elements are only some but by far not all relevant dimensions of the ever-expanding competitive spectrum. Also, in a globalised world where everything is hyper-connected and ideas are swiftly copied, the pace and cadence of innovation has significantly increased.⁵⁴ It has taken technological innovations such as the car, telephone, TV, and even the internet decades to reach (and eventually connect) millions of users in today's internet-based technology society. Compare that to a mobile phone app, building on many of these prior achievements, that can accomplish the same in a matter of days,⁵⁵ and the same will probably be true for other innovations as the exponential technologies age unfolds. Hence, what we increasingly face is so-called «Big-Bang Disruption» which has the potential to collapse the product life cycle we know (including *Everett Rogers*' classic bell curve of five distinct customer segments—innovators, early adopters, early majority, late majority, and laggards)⁵⁶ into only two segments: trial users, who often participate in product development, and everyone else. What this means is that where *Moore* (against the background of the industry dynamics of his time) focused on making the big leap from targeting early adopters to market-

53 Utterback, *id.*

54 Appetite For Disruption, *supra* note 39.

55 Although the popular internet meme that «*It Took the Telephone 75 Years To Do What Angry Birds Did in 35 Days*» is likely if not wrong but most certainly highly skewed—see Timothy Aepfel, *It Took the Telephone 75 Years To Do What Angry Birds Did in 35 Days. But what does it mean*, THE WALL STREET JOURNAL (Mar. 13, 2015, 7:50 AM), https://blogs.wsj.com/economics/2015/03/13/it-took-the-telephone-75-years-to-do-what-angry-birds-did-in-35-days-but-what-does-that-mean/?mod=e2fb&fbclid=IwAR3Hj5dYTnBc53lGX9erpa9ISS6unXMo4rMF-4dP-f8NyMsFngyjb_Yp9jDc (last visited Feb. 3, 2019) and Timothy Aepfel, *50 Million Users: The Making of an «Angry Birds» Internet Meme*, THE WALL STREET JOURNAL (Mar. 20, 2015, 1:00 PM), <https://blogs.wsj.com/economics/2015/03/20/50-million-users-the-making-of-an-angry-birds-internet-meme/> (last visited Feb. 3, 2019) for an interesting background read on this—the basic idea is probably right.

56 Moore, *supra* note 36, at 12.

ing to the early majority,⁵⁷ nowadays big-bang disruptions can be marketed to every segment simultaneously, right from the start. As such the adoption curve where these dynamics can apply has become something closer to a straight line that heads up and then falls rapidly when saturation is reached or a new disruption appears.⁵⁸

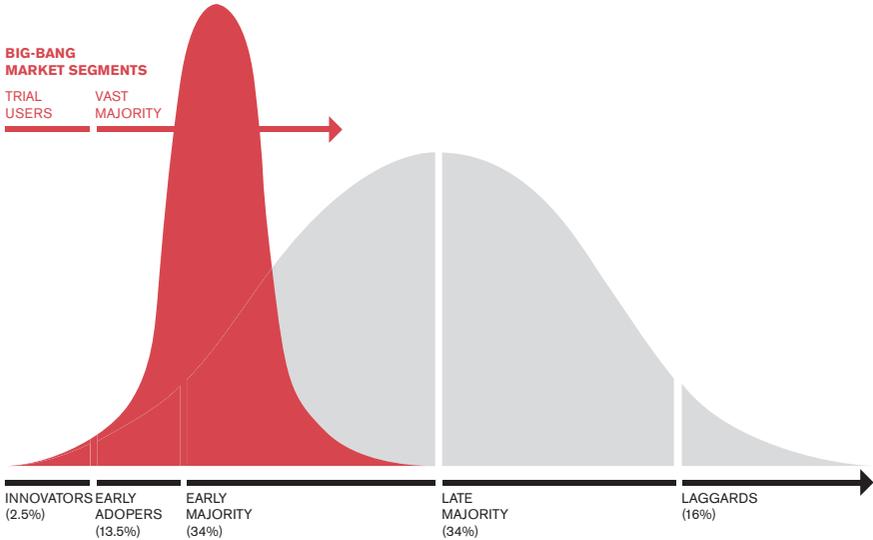


Exhibit 3: Big Bang Market Disruption [Source: DOWNES & NUNES (2014) at 47].

In the past years, the rate of adoption of innovations has accelerated at a dizzying speed across all sectors and industries.⁵⁹ This, depending on your perspective, leads either to a recurring identity crisis for existing products and services or an exciting opportunity to break up entrenched positions—which is particularly relevant for the legal world given its conservative structures which have been cultivated over decades, if not centuries.

Despite our fascination with the new technological opportunities and the potentially decidal powers of innovation, when it comes to the legal world, we should expect to see hyper-evolution—an accelerated version of what *Ron*

57 Moore, *supra* note 36, at xiv.

58 LARRY DOWNES & PAUL NUNES, *BIG-BANG DISRUPTION. STRATEGY IN THE AGE OF DEVASTATING INNOVATION* (Portfolio, 2014).

59 SUSANNE DURST, SERDAL TEMEL AND HELIO AISENBERG FERENHOF (Eds.), *OPEN INNOVATION AND KNOWLEDGE MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES* (World Scientific Publishing Co., 2018) at 142.

Dolin and Thomas Buley refer to as «Adaptive Innovation»⁶⁰—rather than disruption. The reason for this is that the legal industry, at present, is largely a regulated one. This may change over time given the arguments for improved access to justice and the increase in the number of advocates who have developed compelling arguments, evidence, and support for the view that many people would benefit more from what they call «just resolution» of legal problems.⁶¹ They argue non-lawyer advocates and unrepresented lay people across a number of common justice problems have been observed to perform as well or better than lawyers. As such, they contend that if the goal is indeed to create access to justice, other services can be more effective and efficient than that provided by lawyers.⁶² That being said, at present we do not have a strong indication of deregulation of the industry in the immediate future. In a regulated environment, as indicated above, delivery of the dominant design is also significantly determined by the ability to comply with regulation/enforced standards.⁶³ We strongly believe that **the dominant and most successful design in the legal industry will be a hybrid**. As a consequence, rather than disruption, we expect accelerated evolution to move the industry further up (and to prolong) the existing S-curve. We believe that such an environment typically favours incumbents with deeper investments pockets as long as they are able to: 1) recognise and swiftly integrate new, superior, and soon to be dominant technical solutions;⁶⁴ and, 2) leverage softer factors that are built around the ability to comply with required/prohibitive legal/regulatory requirements and industry champion parameters (such as bar admission, independence, talent pull, brand, reputation, and trust etc.). This, in turn, leads to upwards consolidation and the parallel rise of significant enabler-technology-platforms.⁶⁵

60 Ron Dolin & Thomas Buley, *Adaptive Innovation: Innovator's Dilemma in Big Law*, 5 (2) HARVARD LAW SCHOOL'S THE PRACTICE (Jan.–Feb. 2019).

61 Christian Farias, *Everyone Needs Legal Help. That Doesn't Mean Everyone Needs a Lawyer*, THE NEW YORK TIMES (Feb. 13, 2019), <https://www.nytimes.com/2019/02/13/opinion/legal-issues.html> (last visited Feb. 16, 2019).

62 Rebecca L Sandefur, *Access to What?* 148 (1) DAEDALUS 49–55 (2018) (published online Jan. 1, 2019), https://www.amacad.org/sites/default/files/publication/downloads/19_Winter_Daedalus_Sandefur.pdf (last visited Feb. 16, 2019).

63 Dobrauz & Wirth, *supra* note 21, at 174.

64 On this note we should not forget that for example the ABA's Model Rules of Professional Conduct spell out a duty to maintain relevant technological knowledge and skills. Of course, as Robert Ambrogi notes the Model Rules are just that—a model. They provide guidance to the states in formulating their own rules of professional conduct. Each state is free to adopt, reject, ignore or modify the Model Rules. For the duty of technology competence to apply to the lawyers in any given state, that state's high court (or rule-setting body) would first have to adopt it. To date 35 states have adopted this *de facto* new standard. See Robert Ambrogi, *Tech Competence*, LAW SITES (2019), <https://www.lawsitesblog.com/tech-competence/> (last visited Feb. 5, 2019).

65 Dobrauz, *Towards an agoge for tomorrow's legal professionals*, *supra* note 2, at 19.

VI. Offerings and Organisations will be re-shaped by Changing Demand

As *Thompson Reuters* note:

«Since 2008, there has been a complete shift from a seller's to a buyer's market for legal services. In stark contrast to the traditional law firm model, clients are now in control of all key decisions impacting legal representation—from staffing and scheduling decisions to outsourcing requirements, from project management to pricing structures—and they are not likely to relinquish that control anytime soon.»⁶⁶

The big buyers of and significant providers of legal services themselves are in-house legal departments.⁶⁷ These are under significant pressure to continuously provide more for less and work against increasing complexity and shorter timelines. Therefore, legal departments are undergoing a structural evolution and their demand for support becomes significantly modified. At the same time, the mix of work required to deliver optimal output will change—essentially reducing the artisanal part to what truly requires skill and allowing key talent to focus on what really matters. In order to cater to this altered demand, law firms have to change. In a world where anything can be ordered with the click of a button, clients are now expecting professional services to be easily accessible, transparent, flexible, and fairly priced. But this goes far beyond simple digitization (which itself will go far beyond the J-curve of exponential growth of references to emojis in court opinions we have recently seen).⁶⁸ What we will see in the years to come is a fundamental transformation—«from pyramids to rockets» as aptly outlined by *BCG* in collaboration with *Bucerius CLP*.⁶⁹ Despite all their efforts, however, law firms will (in our view) have to accept alternative legal as well as technology and managed ser-

66 Thomson Reuters, *2019 Report on the State of the Legal Market*, (Jan. 14, 2019, 01:16 AM), http://images.ask.legalsolutions.thomsonreuters.com/Web/TRlegalUS/%7B7f73da9c-0789-4f63-b012-379d45d54cdf%7D_2019_Report_on_the_State_of_the_Legal_Market_NEW.pdf (last visited Feb. 11, 2019) at 13.

67 The Law Society of England and Wales, *The Future of Legal Services* (Jan. 28, 2016), <https://www.lawsociety.org.uk/support-services/research-trends/the-future-of-legal-services/> (last visited Feb. 13, 2019) at 6.

68 Nate Robson, *Q&A: Getting Ready for the Emoji Law Revolution*, in *LAW.COM* (legaltech news), <https://www.law.com/legaltechnews/2019/02/08/qa-getting-ready-for-the-emoji-law-revolution-397-16729/?kw=Q&A:%20Getting%20Ready%20for%20the%20Emoji%20Law%20Revolution> (Feb. 8, 2019) (last visited Feb. 9, 2019).

69 Boston Consulting Group & Bucerius Law School, eds., *How Legal Technology Will Change the Business of Law*, at 10.

vices providers (and combinations thereof). This will likely not lead to one monolithic «enriched rocket» law firm design that caters to the reshaped in-house departments (and also to private clients via lawyer bots and automated legal documents supplied online). Instead, it will result in a new and more diverse composite, delivery ecosystem. It remains to be seen, however, which players will ultimately hold the reigns at which stage and in which segment.

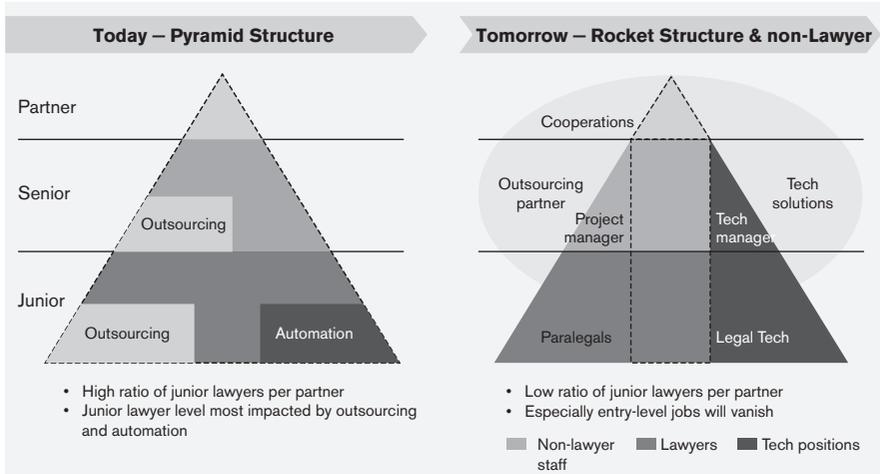


Exhibit 4: «From Pyramids to Rockets» [Source: BCG & Buccerius at 10].

It is obvious that the legal industry has yet to reach a point of real transformative change. So far, we have seen the introduction of a bit of tech-enabled efficiency and a slight change of the mix of service providers via the addition of alternative legal service providers. Otherwise, labour and paper still largely dominate.⁷⁰ In other words, the basic approach to practicing law has not changed much in the past 100+ years. It appears that this is not caused by a lack of tools or know-how, but instead by culture on both sides of the equation or, perhaps, by something which *Bon Jovi* once aptly singled out as «fear»:

«... but there's only one thing that's stopping us now, it's
fear fear fear
of a new thing...
You ain't one for taking chances
You work and you live and breathe that 9 to 5

70 Ken Grady, *Stagnation And The Legal Industry. Real transformation has yet to arrive* (Jan. 2, 2019, 2:14 PM), <https://medium.com/the-algorithmic-society/stagnation-and-the-legal-industry-bc801a8b4d38> (last visited Apr. 12, 2019).

*Still that's what you call living
That's surviving to me
And surviving is living to die in
Fear.»⁷¹
– BON JOVI, Fear (1992)*

In a slightly more technical vein, *Ken Grady* summarized the situation as follows:

«The industry, and in particular the buyers of legal services, are not ready for real transformative change. They aren't ready for 60 minutes of work to be compressed into 60 seconds or 6 seconds. They aren't ready for the labor of 20 to be done by 1. Even though there are isolated examples of this happening, it hasn't become sustainable or wide spread. The buyers certainly aren't ready for a world filled with paper to be converted to a digital, computational world.»⁷²

But as the cost pressure on legal departments increases, the tipping point may soon be reached. In addition, law firms need the change just as badly (whether they like it or not) as the storm will shortly hit their shores. In-house legal departments are nearest to the earnings per share, return on investment calculations every quarter, because they were asked to be more efficient earlier. They are now starting to pass that request for enhanced efficiency on to their law firms.⁷³ According to the latest *Clio* research, lawyers today miss out on nearly 5.6 hours of billable work on each 8-hour work day as too much time is spent on other activities.⁷⁴ Although the top law firms reported a record year in 2018, this is only true for the uppermost echelons of the industry. In general, there is a growing segmentation in the marketplace between the top-performing firms and all the rest.⁷⁵ The top of the hourglass continue to win by focus-

71 BON JOVI, FEAR (1992).

72 Grady, *supra* note 70.

73 Sue Reisinger, *Experts Disagree on Who Leads the Way on LegalTech—Law firms or In-House Counsel*, LAW.COM (Feb. 21, 2019, 2:33 PM), https://www.law.com/legaltechnews/2019/02/21/experts-disagree-on-who-leads-the-way-on-legal-tech-law-firms-or-in-house-counsel/?kw=Experts%20Disagree%20on%20Who%20Leads%20the%20Way%20on%20Legal%20Tech%26mdash%3BLaw%20Firms%20or%20In-House%20Counsel&utm_source=email&utm_medium=enl&utm_campaign=afternoonupdate&utm_content=20190222&utm_term=ln (last visited Feb. 22, 2019).

74 Clio, *Legal Trends Report 2018*, Clio, *Legal Trends Report 2018* (Jan. 7, 2019, 10:09 AM), <https://www.clio.com/wp-content/uploads/2018/10/Legal-Trends-Report-2018.pdf> at 11.

75 Dan Packel, *After a Record-Setting 2018 for Law Firms, Does a Reckoning Await?* LAW.COM (Dec. 17, 2018, 5:00 AM), <https://www.law.com/americanlawyer/2018/12/17/after-a-record-setting-2018-for-law-firms-does-a-reckoning-await/> (last visited Feb. 2, 2019).

ing on talent management and high-value work. The bottom of the hourglass increasingly focus on building scale through the effective use of data, process management, and technology, and attempt to show client focus through productisation and partnering with other parts of the legal services supply chain.⁷⁶ In addition, mergers and consolidation dominate the agenda on an unprecedented scale.⁷⁷ For the middle and lower part of the spectrum, the pressure increases as the top law firms continue to branch out. For the past two decades, large law firms have been expanding into new markets at a tremendous pace. In particular, the United States' largest 250 law firms by attorney headcount, the so-called NLJ 250, have nearly doubled their geographic coverage by adding more than 1,400 new offices across the globe since 2001.⁷⁸

«This process has fundamentally changed the legal market in two important ways. First, it has created a group of law firms with vast scale and geographic reach. Equally important is the impact that expansion has had on local law firms. Many regional legal markets have been transformed over the past decade. They have transitioned from localized markets, dominated by legacy firms, to highly competitive marketplaces, fully integrated into the global legal services market.»⁷⁹

Against this background, all law firms (irrespective of classification) want to and, indeed, need to increase revenues. Yet, the typical lawyer already works more than s/he plans to each week. Fundamental change is also needed on this side of the equation. This point is also highlighted in *Thomson Reuter's* latest industry research which concludes:

«While the number of worked hours has been reasonably stable in recent years, it is important to note that, compared to average billable hours in the pre-recession years (i.e., prior to 2008), there remains a significant difference. By way of illustration, in 2007, the billable hours worked averaged 134 per month. Through 2018, the average is now 122 per month, or a difference of 144 hours per year from the 2007 level. To see the economic impact of this reduction in productivity, one need only multiply this annual

76 David Curle, *Legal tech adoption and the real drivers of change*, THOMSON REUTERS BLOG (Feb. 8, 2019), <https://blogs.thomsonreuters.com/legal-uk/2019/02/08/legal-tech-week/> (last visited Feb. 5, 2019).

77 Elizabeth Olson, *Law Firms Announced Record-Breaking 106 Mergers Last Year*, BIG LAW BUSINESS (Jan. 7, 2019), <https://biglawbusiness.com/law-firms-announced-record-breaking-106-mergers-last-year> (last visited Feb. 4, 2019).

78 AML, *The Invasion of Regional Legal Markets and How Mid-sized Firms Should Respond*, <https://www.alm.com/intelligence/solutions-we-provide/business-of-law-solutions/analyst-reports/barbarians-gate-report/> (2018) (last visited Feb. 22, 2019)

79 AML, *id.*

difference by the average worked rate in 2018 of USD 489 per hour, to see that the decreased productivity over the last decade cost firms some USD 70,416 per lawyer per year in 2018. For a firm of 200 lawyers, that translates to a total cost of USD 14.1 million; for a firm of 400 to USD 28.2 million; and for a firm of 600 to USD 42.3 million.»⁸⁰

Harvard Law School Professor *David Wilkins* sees the legal industry as one run on «elevator assets», stressing that law firms don't have to worry too much about locking their offices in the evening as their true assets leave the building in the evening via the elevator.⁸¹ We agree with this view and don't believe that, despite the increasing importance of technology, this will completely change. Instead, we expect that particular, emerging disruptive, digital innovations will trigger a transition. Instead of using technology as a tool to increase efficiency and enable more sophisticated work in a people-leveraged business model, technology will be a core generator of the actual legal work product. Quite obviously this expected transition from core work being done by people assisted by machines to work being done by machines controlled by people will have a transformational impact on business models.⁸² As *Paul Daugherty and H James Wilson* aptly presented in their model reproduced in Exhibit 5 below, a continuum exists from work that can only be done by humans (because of the degree of intellectual ambiguity and complexity, requiring a level of judgement or empathy of which machines are incapable) to work that can or should only be done by machines (because of the sheer volume of data involved, the complexity or the analysis to be performed, or because the machine can do the work as well or better than humans, far less expensively).⁸³ Within this continuum, we can (or rather we must) expect a steady shift in activities from left to right across the spectrum, with machines taking over more and more existing work, and humans, aided by those machines, taking on more sophisticated and entirely new kinds of work. Along with this, we would expect a middle ground existing between human and machine, where each depends on the other to deliver the best performance.⁸⁴

80 Thomson Reuters, *supra* note 66, at 7.

81 Comment by Professor *David B Wilkins* during his joint lecture with *Ron Dolin* «Operationalizing Innovation in the Market for Legal Services» at the Harvard Law School Center on the Legal Profession on Feb. 13, 2019 as noted by Dr Guenther Dobrauz-Saldapenna.

82 Cambridge Strategy Group, *Thriving at the Edge of Chaos—AI, Blockchain and the Law Firm of the Future* (2018), <https://mailchi.mp/c8a7253a01c3/thriving-at-the-edge-of-chaos-download> (last visited Feb. 22, 2019) at 23.

83 Paul A Daugherty & H James Wilson, *What Are The New Jobs In A Human + Machine World?*, FORBES (Jul. 17, 2018 5:18 PM), <https://www.forbes.com/sites/insights-intelai/2018/07/17/what-are-the-new-jobs-in-a-human--machine-world/#15f7830063e3> (last visited Feb. 7, 2019).

84 PAUL R DAUGHERTY & H JAMES WILSON, *HUMAN + MACHINE: REIMAGINING WORK IN THE AGE OF AI* (Harvard Business School Press, 2018).

Lead Empathise Create Judge	Train Explain Sustain	Amplify Interact Embody	Transact Iterate Predict Adapt
Human-only activity	Humans complement machines	Technology gives humans superpowers	Machine-only activity
	Human and machine hybrid activities		

Exhibit 5: The Human/Machine Performance Continuum [Source: Daugherty & Wilson (2018)].

We are also convinced that smart people work best in a smart workplace which offers the prospect of not only a rewarding but also a meaningful journey with minimum precious time wasted on non-value adding tasks. So, let's take wasted hours out of an industry which has built a cult around the hour but where the last good day for the billable hour clearly was yesterday. If the move across the continuum (described above) is unavoidable, soon a point will be reached where charging for work on the basis of the human effort and investment by the firm alone becomes nonsensical. At that point, the «billable hour» will likely cease to have relevance, except in very rare circumstances.⁸⁵ Or as Mark A Cohen put it so pointedly: «[...] just knowing the law and <bill baby bill> won't cut it any more».⁸⁶

With the right technology, it becomes possible to unlock untapped potential. The organizations that adopt the right technology coupled with a culture that values diversity of talent and a focus on the client at the center (over money)⁸⁷ will attract the brightest talent.⁸⁸ Now, with this in mind, it is time to

85 Cambridge Strategy Group, *supra* note 82, at 23.

86 Mark A Cohen, *Are Law Firms Becoming Obsolete?*, FORBES (Jun. 12, 2017, 5:36 AM), <https://www.forbes.com/sites/markcohen1/2017/06/12/are-law-firms-becoming-obsolete/#5779f682264d> (last visited Feb. 12, 2019).

87 Reena SenGupta, *The best law firm innovators alter their culture first*, FINANCIAL TIMES (Jun. 2, 2017), <https://www.ft.com/content/4ed185c8-3bcc-11e7-ac89-b01cc67cfeec> (last visited Feb. 5, 2019).

88 Note: This seems particularly important as young talent today is starting to consider pursuing careers in other sectors than the law where the career outlook is perceived as being less attractive. See for example Noam Schreiber, *An Expensive Law Degree, and No Place to Use It*, THE NEW

embrace new technology, forge allegiances which previously were deemed too alien to even consider, and re-invent from the ground up. We tend to simply look towards California and the Silicon Valley to hand us the next set of keys. That won't work this time around. California, indeed, has pioneered tools of personal liberation from LSD to surfboards and mobile phones.⁸⁹ However, as we enter the world of exponential technologies and the legal industry faces multi-faceted and multi-dimensional challenges, relevant innovation can literally come from anywhere.⁹⁰

Finally don't forget that we are now entering not only the age of exponential technologies but likely and building on these also the age of increased decentralization and disintermediation. The rise of the so-called «Gig Economy» may just be a first glimpse of what's to come. Ultimately, we may also move into an age of truly «liquid talent» and overcome the pyramidal (and even «rocket») structures which in our view are largely an increasingly outdated legacy of the industrial revolution. At that time the only blueprints to respond to the swiftly arising need to organize larger groups of people into a workforce were the army and the church. What was an efficient and effective delivery structure for almost two centuries now is increasingly challenged by the reality we face today and likely inadequate to fully unlock the potential of in particular diversity. Soon we may find ourselves effectively going back to a future where everyone will (again) become an entrepreneur around his or her specific skills and talents, forming constantly changing centers of gravity with other experts sourced globally and perfectly matched via networked platforms around rewarding and meaningful challenges. And once again technology could be a catalyst for this and new concepts such as pursued by for example *Catalant Technologies* out of Boston may change the narrative. And for the better.

So, it is time to embark on an unbiased journey of discovery! Although the future may require lawyers to put on «New Suits», it represents an enormous opportunity to reinvent ourselves for our own and our clients' benefit!

YORK TIMES (Jun. 17, 2016), <https://www.nytimes.com/2016/06/19/business/dealbook/an-expensive-law-degree-and-no-place-to-use-it.html> (last visited Feb. 16, 2019).

89 Appetite For Disruption, *Chapter 03 | Technology Bridge—Evaluating and Investing in Innovation*, YOUTUBE (Nov. 18, 2018), https://www.youtube.com/watch?v=4qfeGuoWD_s&t=76s (last visited Feb. 8, 2019).

90 Remember: truly disruptive innovation typically comes from outside of the established industry! And as *Bruce Springsteen* once said:

*«We learned more from a 3-minute record, baby,
Than we ever learned in school»*

BRUCE SPRINGSTEEN, *NO SURRENDER* (Columbia Records, 1984).

«Come on, come on, gotta trust in something strong
Gotta keep them wheels on turning
Or die with the rest and wrong
Hang on, hang on, gonna beat that wind for long
Yeah, eat that dust and savor the road less traveled on.»⁹¹
– CHUCK RAGAN, *The Fire, The Steel, The Tread* (2013)

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91 CHUCK RAGAN, *THE FIRE, THE STEEL, THE TREAD* (Ten Four Records, 2013).

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