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e-book

Adult Education
in the Age of
Cumulative Complexity

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Adult Education in the Age of Cumulative Complexity

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Published by Belair Publishing Company

San Diego, California

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INTRODUCTION

If you hadn't noticed, there is a new world order, brought about by what the media now universally calls *The Great Recession*. In this paradigm shift, complexity is a central factor dividing success from failure, and not just the simple kind of complexity, with which we are all too familiar in everyday life, but the 21st century kind that we at **KM & Cie.**¹ have labeled *Cumulative Complexity*.



What is cumulative complexity, and what does it have to do with education?

The topic of this eBook is to answer these two questions in ways that help you leverage this new understanding into your own decision making processes in the context of adult education decisions.

Cumulative complexity refers to the mainstreaming of multidimensional risks, correlations, and instabilities in economic, political, societal, and sovereign processes and interactions, that together create an environment too complex to comprehend or manipulate accurately by all but the most extraordinary minds and experts. The mainstreaming of cumulative complexity, in part as a consequence of the Great Recession, or maybe more accurately, *as a primary cause of the Great Recession*, has resulted in the emergence of an elite of hyper-intelligent, ivy-league technocrats, while people of average means and talents are being disenfranchised at an unprecedented pace.

**DEF
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ION**

Cumulative complexity refers to the mainstreaming of multidimensional risks, correlations, and instabilities in economic, political, societal, and sovereign processes and interactions, that together create an environment too complex to comprehend or manipulate accurately by all but the most extraordinary minds and experts.

This phenomenon affects a large proportion of the population, by keeping the unemployment rate systemically high and average wages low and expanding the ranks of the impoverished to levels not seen in North America in fifty years ("Since 1960, the number of people below poverty has not exceeded the 2008 figure of 39.8 million people" - U.S. Census²).

¹ www.MerxEnterprises.com

² The official poverty rate (annual income of \$22,050 or below for a family of four) in 2008 was 13.2 percent (these are the latest numbers available): 39.8 million people were in poverty (8.6 percent for non-Hispanic Whites; 11.8 percent for Asians; 23.2 percent and 24.7 percent for

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A growing number of wage earners cannot find work at all, or cannot find work that provides livable wages. This problem is not limited to the millions of uneducated adults in the U.S., but increasingly impacts trained and educated people as well, especially those who are older, or who are black or latino | a.

People in difficult work and financial situations, but with enough self-confidence and hope often turn to the promise of education to rebuild their lives. But in deciding on a school and study program, they are well-advised to consider these complexity factors and to understand the era of interconnectedness and globalization in which we live, and how this will impact their future career path options. We advise prospective students to not limit their planning to the years of schooling until graduation, but to focus their outlook from the start on graduation plus five years (we call it **G+5**).



This eBook examines cumulative complexity as a significant emerging macro-socio-economic force field in our society. Specifically, we want to encourage readers to consider its impacts on their education-related choices and decisions. In the end, we want to help prospective and current adult students develop the skills and knowledge to thrive in this very challenging environment.

Blacks). – Source: U.S. Census. In addition, nearly 20 percent of America's children live in poverty.

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THE GREAT RECESSION

In the second half of 2008, it finally dawned on not just economists and financial specialists, but on common folk as well, that our economy was in serious trouble. Until then, most of us just accepted that equity loans were a good way to get free money at a low interest rate, plus a tax deduction on the interest; that housing prices would keep going up and up; and that unemployment rates would forever remain at negligible levels.

The end came down like an alpine avalanche: banks collapsed, AIG went to the brink, and GM went bankrupt: *GM went bankrupt!* At first, it was like watching a disaster from afar, but quickly the calamity engulfed (almost) all of us.



As people lost first their retirements, and then their jobs, they looked for new ways to reconstruct their futures. Many have turned to education to recapture their dreams of financial security and maybe even retirement. Millions have decided to go back to school.

Yet, only 25% of college graduates find work in their chosen professions.

Not all adult schooling has the same value; in fact, given the high demand and the loose availability of federal student loans for the needy, the erstwhile traditional post-secondary school environment has exploded into a near free-for-all of all kinds of private, non-profit, and public institutions offering up their programs through aggressive marketing and advertising.³



Many adult students enroll in programs and institutions that will not produce a good ROI⁴ for them: the value of their eventual degrees, assuming that they will in fact finish their programs, will not measure up either to the cost of the program, or to the goals and dreams they associated with their learning endeavor. They end up disappointed, in heavy debt, and without the hoped-for improved employment and career outlook.

Those going back to school in this socio-economic climate must take into account the future impacts of cumulative complexity on the value of production, services, and information. Getting a degree is economically useful only if the resulting knowledge and diploma are

³ Check out www.PickTheRightCollege.com for substantive adult education advice and free access to hundreds of accredited colleges and universities.

⁴ ROI = Return On Investment

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attractive to potential employers, so that the education can be effectively translated into those wished-for career goals. Degrees from schools with no recognition or a poor reputation, degrees in fields that have few openings or are set to decline over time due to obsolescence, especially in a depressed economy, or sub-standard academic results at graduation (a low GPA), will all conspire to devalue the education completed.

The personal planning effort for a degree program must therefore be circumspect and consider all these factors, as well as the environment that awaits the graduating student.

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TERRORISM AND THE WARS

What are the root-causes behind the Great Recession and its impacts on common wo|man?

9-11-2001 marked the end of an age – what we fondly called the *Information Age*, when we still believed that the post-industrial era was marked by long-term economic and societal opportunity and growth based on the ever increasing value to society of information itself – and the beginning of another age, where predicting the future had suddenly become dramatically more difficult. The end of the *Cold War* had led to a brief euphoria before the turn of the millennium that the new century would be one of great progress, peace, and prosperity – *9/11 destroyed that dream in less than one day!*



Ten years later, we all understand that the first decade of the 2000s instead brought mayhem, economic decline, and broken promises; opportunities resulting from the collapse of the Soviet empire were wasted, as Afghanistan and Iraq were invaded in the pursuit of revenge as much as containment of terrorism, and the “me” generation turned *self-centeredness and greed* into cynical new art forms.

We have replaced the Cold War with two hot wars and the very real threat of weapons of mass destruction in the hands of fanatical terrorist groups. We have entered a new age, where \$US millions have become billions, and billions are now trillions – numbers that humans cannot readily visualize or contextualize, even though much of that is national indebtedness. While the world is technically more interconnected than ever, this phenomenon has failed to foster common strategies and strategic synergies, instead depressing genuine political and economic collaboration to levels much lower than when a common communist enemy provided the sense of urgency to work together toward common socio-economic and political goals. The opportunity for greater unity has instead resulted in greater international fragmentation.

We also know now that information alone cannot define a new human age. In fact, today, information has been commoditized to a point where its intrinsic value can be called comparatively negligible. Instead we suffer from information overload, and yet an inability to turn all that information into better plans and decisions.

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As a direct result of the *Great Recession*, the information age has given way to the *Age of Cumulative Complexity*, characterized by the mistakes of the last decade that have resulted in a world, where the gulf between a declining mainstream and the small technocracy that actually understands the new world order, seems to only be growing as the economic decline endures.

These developments have made it more difficult for the average American to earn a prosperous living, with good benefits and a predictable retirement. Instead, most of us have had to reset our clocks and devise new plans for the future. For many, this means going back to school and getting more education.

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SO WHAT IS CUMULATIVE COMPLEXITY?

The concept of **cumulative complexity** in the context of the Great Recession was introduced by KM & Cie. in a couple of blog posts⁵ on the KM & Cie. blog⁶ earlier this year. It results from the realization that a conflagration of factors has made sustainable success in the modern world the purview of an elite few, who understand and master levels of complexity not comprehensible by, or accessible to, the common wo | man.



During the height of the financial crisis, for example, one Wallstreet firm stood out by succeeding where so many others failed: Goldman-Sachs. Vilified – with some justification – for their wily handling of the crisis, they nevertheless applied their cumulative corporate intellect to making daily adjustments to their strategic decisions in such a way as to emerge from the worst of the economic disaster relatively unscathed. The dynamic complexity of their multi-dimensional decision processes (as explained at a high level during congressional testimony) represents a prime example of this cumulative complexity paradigm, a rapidly pivoting, multi-faceted set of deep and wide mega-challenges that stumped all but the most competent Wallstreet actors.

Similar types of multi-dimensional, cumulative complexity can be found in many other economic and business scenarios, from supranational corporations, to government regulations, to the complexity of modern enterprise computer systems (e.g. Goggle algorithms), to the international logic – or lack thereof – of gold prices and wide-swing currency fluctuations, to dealing with international terrorism, to the sovereign debt crisis in a growing number of European countries.

Coping with these new dynamics is beyond the capacity of most people. Instead, the inherent fear of what they do not understand paradoxically leads the masses to look toward those with simple – simplistic – messages that seem to restore some of that lost comfort of the Bush years, when we all turned a blind eye to the emerging problems in our financial and political systems. We risk losing the opportunity to master these challenges with the requisite intelligence, understanding, and attention to the actual complex details, demoting the United States to a second-tier player on the world stage in a shorter time than we may now imagine.

⁵ <http://kmetcie.blogspot.com/2010/04/cumulative-complexity.html> and <http://kmetcie.blogspot.com/2010/05/cumulative-complexity-continued.html>

⁶ <http://kmetcie.blogspot.com>

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One key problem is that education is often far behind the realities of the world, in which we live. Some of the worst offenders are the traditional (second-tier) public colleges and universities⁷ and their tenured professors, who simply lack the incentive to stay current, and mediocre private colleges and universities, which prioritize profits over academic relevance and excellence. In addition, the average person these days does not read very much, and is poorly informed: schooling no longer promotes those basic good habits, which have helped many of us develop adult awareness of our surroundings and interests beyond the limited scope of just our personal lives.

In these complex times, education is only part of the solution: adult students returning to school have to do much more than just complete their classes with decent grades; they must transform themselves into smart, well-informed professionals using their course work as mere catalysts to promote extensive new learning.

Unlike in prior times, it is a serious challenge for adult students to actually derive the long-term benefit they seek from their education: no longer is a bachelor degree an automatic job with a good salary and decent benefits. Education alone is insufficient: adult students, who want to leverage their education into a satisfying new career, have to master enough of this cumulative complexity to thrive in it.

⁷ Addressing the issues in K-12 education is beyond the scope of this eBook.

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THE ROLE OF TECHNOLOGY



Digital technology has brought us many benefits, including the accuracy and speed of computers, connecting the world over the Internet, and providing affordable wireless telephony, among many others. But technology has also helped precipitate the accumulation of complexity into our mainstream life and work processes through its very ability to connect everything and everybody with everybody and everything, creating hyper-complex interdependencies that didn't exist before.

Adult students need to include the role of technology in their education and career plans: as they develop new skills and distinctions, technology is certain to play a part in these new knowledge domains. Technology evolves rapidly and requires ongoing learning and discovery.

A useful and simple way to stay abreast of the ways that technology impacts plans and careers, but also macro-level systems in society, is to add technology-related publications to your reading list, even if they are “just” popular magazines like WIRED®. Not understanding, or being interested in, technology is not a valid position for a 21st century professional to take.

But beyond an interest in technology, the deeper understanding of the impacts of technology on critical processes in society is a prerequisite for mastering the technology perspective on cumulative complexity.

Take for example, computerized trading on Wallstreet: billions of stock trading transactions are made every day by computers, at nearly the speed of light. How does this impact the financial systems today and in the future? Or what is the role of technology in modern warfare? What does all this technology cost us, directly and indirectly? Are the benefits always clear?

For many students the role of technology plays a central role already, if they are taking classes online. The quality of education in online programs is a hotly debated issue, with some educators convinced that online learning is by definition limited, and others promoting the virtues of online learning as at least equivalent to in-class instruction.⁸

Whether in education or other aspects of personal and professional living, technology, in particular computer technology, plays an important role in accelerating and mainstreaming cumulative complexity, and mastering this new-age matrix of complexities requires an excellent understanding of how technology informs the layers of complexity present in strategic decisions, communication and collaboration processes, and core workflows.

⁸ In the interest of full disclosure, this eBook is sponsored by online college **Belair Online:** www.Belair-Online.com.

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LEARNING HOW TO THRIVE IN THIS NEW AGE

Can you master cumulative complexity, even if you are not a Stanford-educated genius trained by Goldman-Sachs?

Maybe. As of this writing (July 2010), the economy persists in a state of great instability, where its ups and downs remain largely unpredictable. The worse the overall malaise, the more influential the factors of complexity are on your individual chances to succeed.

First, you have to understand and accept the existence and importance of cumulative complexity and respect its impact on your choices. The old assumptions that going back to school, picking a degree program based on personal interest or an advisor's suggestion, studying hard enough to get Bs, and graduating with 128 or 132 credits is enough to do well for the rest of your life, to secure your future, are simply outdated, and probably for good.

And incidentally, the idea that people can build a new life on "green technology,"⁹ is also dubious, given the relatively small size of this industrial sector, the scarcity of "green" jobs, and the low wages in that industry, which may sound progressive given its "green" label, but really is just a throwback to yesteryear's blue-collar work in the industrial age.

The ticket to security and comfort today and in the future is based on being and remaining *personally competitive*. It matters less that you fulfill your school's graduation requirements (which you have to do, of course!) than that you fulfill society's productivity expectations. And unfortunately, the latter exceed the rigor of the prior, in this age and in this economic climate.

So what are you to do?

First of all, you need to honestly evaluate your own capabilities, preferably with unvarnished input from trusted third parties. *How smart are you really?* How well are you prepared to go to college, in terms of basic skills? Or how much remedial help will you need before you can even get started on regular course work? How disciplined and resilient are you? What is your attention span? Will you actually persist until you graduate? Can you really afford to get an education? Will you be able to pay back any student loans comfortably that you may have to take on? What sacrifices will you and your family be willing to make, and are you really ready for all that, for the *multiple years* it will take for you to finish a degree program? Until you can answer all these questions in the affirmative, don't even start.

⁹ As regularly suggested by the current Administration

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There are a number of factors that can turn the tide in your favor. First of all, you have to select a school and program with maximum inherent value. Then you need to augment your studies with as much value-added knowledge and work study as possible, so that after graduation, you are *worth employing*. And you need to critically evaluate what specific worth the market expects of you to actually land a good job in your field at graduation (assuming that is in fact your goal; similar arguments apply if you want to be self-employed).

Selecting a school and study program/major are two very important decisions, which should be neither rushed, nor made based on emotions or friendly recommendations; you need to study your choices critically and factually, and make the decisions that are right for you today, next year, and five and ten years from now.

Then you need to select the school curriculum that maximizes your talents and skills, and you need to make sure that your passions coincide with your chosen major and career path: success in the aforementioned world of cumulative complexity is most achievable when you concentrate all your interests and faculties on your chosen career path, simply because you love what you do.

Very smart, highly educated and driven people, with relevant, hands-on experience in their domain of passion are the most likely to succeed in our economic environment. Unfortunately, current-day economic conditions are likely to persist, given the realities of globalization, the long term systemic budget problems facing the USA and its aging baby-boomer liabilities, and the emergence of competing world powers with lower costs and faster growing productivity indices. These high thresholds of acceptance and productivity will therefore persist along with our changed economic realities.

A recommended way to join the ranks of the very-smart and very-productive is to aggressively embrace a life philosophy of continuous improvement, where learning and developing new distinctions, skills, and perspectives is not just a temporary attitude while a student, but a lifelong, daily commitment. But here also, it is not just a one-dimensional commitment to learning and improvement, but the scale, quality, and depth of that improvement are critical to achieving and maintaining your long-term competitive posture.

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CONCLUSION

Cumulative complexity is now a mainstream factor in the economy and in society that should critically inform the decisions you make when going back to school to get a college degree, whether bachelor, master, or terminal degree (e.g. doctorate).

The skills and knowledge required of you in your future career likely exceed the educational content of the programs offered by your chosen college or university, forcing you to supplement your study program with additional learning to ensure that your post-graduation plans are actually realizable.



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August 1, 2010

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