Matthew's Book Club Summary #8

By:	Matthew Klippenstein	**Date:**	January 7, 2010
Title:	Cradle to Cradle		

The book club started as an informal, fun way to explore and consider business ideas relevant to our work with colleagues. The format consists of one person (usually Matthew) reading a book and writing a summary for discussion during team meetings. This allows the other team members to benefit from the book's insights, without carving time in their schedule to read the full volume.

The idea was to summarize ***an interesting part*** of each chapter in a paragraph or two, and where applicable, note how these could be relevant to the workplace. This provides the reviewer with practise condensing a mass of data into a few pieces of key information: an underappreciated skill. The reviews are meant to be accurate but light-hearted, on the assumption that people learn more when they're having fun.

Matthew's company gave permission for these to be distributed to non-employees as long as the employer-specific content was removed, for which he is sincerely appreciative.

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About the authors:

William McDonough is a former university dean of architecture who received the US's highest environmental award in 1996 (the Presidential Award for Sustainable Development). Michael Braungart is the former director of chemistry for Greenpeace.

They created MBDC (McDonough-Braungart Design Chemistry) in 1995, and have worked with an assortment of Fortune 500 companies. Their most famous project is probably the redesign of Ford's River Rouge facility.

The book's full title is Cradle to Cradle: Remaking the way we make things.

Ch	Title	Summary
	Intro: this book is not a tree	Almost everything we make, is made to be thrown away. Even recyclable objects (pop bottles) are typically only *downcycled* once or twice (e.g. jackets, shopping bags) en route to the landfill or incinerator. Regular books are made of paper and ink. Paper is usually downcycled, not recycled, and most inks contain trace amounts of heavy metals. The authors chose to make the book out of a specific polymer (it's waterproof!). The book can be melted and the polymer recovered when someone's finished with it.
1	A question of design	Virtually all industrial products are based on the "throw-away" model of ***cradle-to-grave*** thinking. But nature operates on a ***cradle-to-cradle*** model. (e.g. deer eat plants which convert deer droppings into more plants for more deer.) Nothing gets thrown away – frankly, because there's no "away" to throw things! Most sold items can be thought of as "*products, plus*". They serve a function, and deliver bonus side effects. Examples include tin cans, which contain trace amounts of BPA. Or bottled water, which may contain trace amounts of antimony (a heavy metal used in the plastic's polymerization process). *Companies would be advised to think of what "bonus" side effects their products might produce - during manufacture, operation and disposal. If any of their competitors address those issues, the company might find itself outflanked.*
2	Why being "less bad" is no good	Reducing, reusing and recycling only *slow down the rate of increase* in the accumulation of industrial waste into natural systems. Our goal should be to reduce the absolute levels, not slow the rate of increase. That requires redesign from the ground up.

Ch	Title	Summary
		The chapter argues regulations on pollution are a *license to harm* in return for providing societal benefits, and suggests regulations which combine carrot *and* stick might be more effective at spurring private sector innovation.
3	Eco-effectiveness	The authors suggest new products be designed to align with existing natural services. Grass roof on a factory will temporarily soak up 1 inch of rainfall, meaning the builders may not need to design a storm water drainage system; it will also insulate the roof, reducing heating/cooling costs, and provide food & habitat for various species.
4	Waste equals food	In nature, waste equals food. So let's design products which easily separate into biological nutrients (food for natural systems) or technical nutrients (food for industrial systems). They worked with a fabric company (DesignTex) to create a seat material made entirely from wool and plant-based polymers and additives, so it could fully biodegrade at end of life. Regulators discovered the plant effuent was cleaner than the influent: the factory inherently did not need regulation! An important lesson was that additives are often needed to counter the side effects of… other additives. Using a cheap dye meant adding a UV-blocker to prevent fading, and so forth. Like the mythical hydra, solving one problem the wrong way, often created another. (e.g. mango necessitates more Pt…) *Note: the authors write that until the 19th century, people (ie. Londoners) threw their wastes into the street, being unaware of sanitation principles. But **four thousand year old** settlements in India already used covered sewers…! Just how did the British colonize the world, again?* ☺
5	Respect diversity	This chapter argues that the best solutions are those which are adapted to the local environment. If you design for the worst-case, you wind up totally overdesigning for the other 99% of cases.

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		Ideally solutions should use local materials and take advantage of local energy flows. Sort of a Taoist "going with the flow" philosophy. As an example: Ford pretty much made only one car in the period 1908-1927: the Model T. GM surpassed Ford in sales around that time, because they offered "a car for every purse and purpose". ie. models for different customers. *Cogeneration fuel cells get a mention on p133.* ☺
6	Putting eco-effectiveness into practise	They offer five guiding principles for leading redesign: - **signal your intention:** make clear that redesign will happen, not just tweaking - **restore:** ensure products, buildings and communities nourish the locale - **innovate further:** radical redesign can create bigger markets than tweaking - **prepare for the learning curve:** expect potholes - **exert intergenerational responsibility:** take the long view