A Letter to Young Entrepreneurs: Lessons from Experience in Three Parts

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Abstract

These speaker's notes were prepared for Boston's Fintech Week, but were not presented due to COVID-19.

Their content is based on 40 years of experience, as well as recent discussions with many entrepreneurs that attended Boston's Fintech Meetup Group community in general, and Boston's Fintech Weeks in particular.

While "ecosystem" seems to be the buzzword of the age, reminiscent of "strategic" of an earlier age, fundamental issues remain relevant from entrepreneurial generation to generation.

Examples of such issues include:
- Seeing the requisite priorities,
- Choosing good advisors, and
- Managing personal expectations.

These issues are relevant for start-ups introducing new Fintech products, as well as academic entrepreneurs introducing new theories such as Ergodicity Economics.

The motivation for this presentation is two-fold:
- Sharing lessons that entrepreneurs say are hard to find,
- Hoping to find kindred spirits as we build up CTRI.

Key Words

Start-up, Entrepreneur, Ecosystem, Thermodynamics, Energy Converter, Human Capital, OODA Loop, Ergodicity Economics

A Letter to Young Entrepreneurs

Lessons from Experience in Three Parts

CTRI 2018-2020

After a nearly 20-year hiatus from Kendall Square, following the sale of Rational Investors to S&P in 1999, I rejoined its entrepreneurial circuit in 2018 through the active Meetup Group culture of Boston in general, and its Fintech Week in particular.

It was good to see that beyond the new buzzwords, such as the “business ecosystem”, the issues, and uncertainties remained familiar, including the presence of “energy vampires”, and individual trepidations about the path ahead.

Meeting the next generation of Fintech entrepreneurs reminded me of what I did not know when I was in their shoes during the dot.com boom. After a few meetings, it was clear that sharing this experience should go beyond individual conversations.

In particular, the word “ecosystem” seemed used in many contexts, and in the absence of a clear definition, thus reminding me of the similar use of the word “strategic” in earlier days.

Three Parts

- What do you Mean by Business Ecosystem?
- What to Expect from Advisors?
- What to Expect for Yourself?

This presentation was developed after attending Boston Fintech Week 2018 and 2019, listening to many presentations, and having many discussions with individual entrepreneurs.

It is a reflection of what they sought but could not find easily, if at all.

It is also motivated by the discovery of academic entrepreneurs competing to develop new financial theories such as Ergodicity Economics.

The presentation develops in three parts:

- What is a business ecosystem?
- What to expect from advisors?
- What to expect from yourself?

CTRI's Business Ecosystem Template

(Gadenne, 2018)

Evolutionary Flows vs. Energy Flows	Past/Ancestral	Present/Current	Future/Evolving
High Potential Energy Reservoirs	**Cooperators**	**Mates**	**Preys**
Primary Energy Converters	**Parents**	**Productive Host, Peers, Competitors**	**Children/Offsprings**
Residual Energy Converters	**Benign Commensals, Symbionts**	**Skillful Manipulators, Mimics**	**Terminators, Virulent Exploiters, Predators**

CTRI's business ecosystem template is a development that started when a former RIIA member, Jack Tatar, sent me his 2017 book on crypto-assets. RIIA was the second business I started after Rational Investors. You can find Jack's book on Amazon:

https://www.amazon.com/Cryptoassets-Innovative-Investors-Bitcoin-Beyond/dp/1260026671

Among other items of interest, the book develops a useful process for the fundamental analysis of crypto-assets.

CTRI's business ecosystem template extends and systematizes this process in a 3x3 matrix, as follows:

- The columns represent business evolutionary flows over time.
    - The Ancestral Past, the Present & Current, and the Evolving Future.

- The rows are based on the work of another RIIA member, and current CTRI academic advisor, Professor Tim Garrett. The rows represent the movement of energy flows.
    - Starting with High Potential Energy Reservoirs, flowing to Primary Energy Converters, and down to Residual Energy Converters.

Energy flows and the passage of time affect businesses in the same way they affect living creatures, thus Tim developed a thermodynamic model of the economy.

His thermodynamic model of the economy is most interesting because Tim is first and foremost a cloud scientist.

This means that he is able to apply thermodynamics to economics, instead of the other way around, thus creating new and valuable insights. We used his work at RIIA, and published the following paper in the Retirement Management Journal, in addition to his many scholarly publications:

http://www.inscc.utah.edu/~tgarrett/Publications_files/RMJ-V2N2-Garrett.pdf

As you can see on the Slide, the matrix becomes a clear picture of an ecosystem, especially as we label its nine cells with ecological names, instead of business terms:

- Productive Host,
- Preys,
- Mates,
- Commensals,
- Predators etc.

Energy flows and the passage of time affect businesses in the same way they affect living creatures. It is this energy that becomes products, services, and money.

CTRI's BET + Porter Model

(Gadenne, 2018)

Evolutionary Flows vs. Energy Flows	Past	Present	Future
High Potential Energy Reservoirs	**Cooperators**	**Mates**	**Preys** *Porter Model: Buyers*
Primary Energy Converters	**Parents**	**Productive Host, Peers, Competitors** *Porter Model: Industry Competitors*	**Children** *Porter Model: New Entrants*
Residual Energy Converters	**Commensals, Symbionts** *Porter Model: Suppliers*	**Manipulators, Mimics**	**Virulent Exploiters, Predators** *Porter Model: Substitutes*

For the strategically minded, we can overlay the Porter Model into this business ecosystem template, and show that:

- Preys match with Buyers,
- Commensals match with Suppliers,
- Predators match with Substitutes, etc.

The Porter Model was developed in the late 1970s, and formalized into a book published in 1980, see link below:

https://onlinelibrary.wiley.com/doi/abs/10.1002/smj.4250020110

The Porter Model was developed to map competitive intensity in order to build structural business advantages leading to high profitability.

It was popular with strategy consultants, and used with other techniques such as value-chain analysis.

As you can see on the slide, this ecosystem matrix extends our view above and beyond the Porter Model.

CTRI's Ecosystem in Business Terms

(Gadenne, 2019)

EVOLUTIONARY FLOWS VS. ENERGY FLOWS	Past/ Ancestral	Present/ Current	Future/ Evolving
High Potential Energy Reservoirs	Network	Strategic Partners	Clients/Customers
Primary Energy Converters	Sources	Peers	New Entrants
Residual Energy Converters	Suppliers	Imitators	Substitutes

This third, and last ecosystem slide, uses business terms instead of ecosystem terms to make it easier to use in an entrepreneurial context.

This is the map that comes to mind when I hear discussions, or watch presentations that use the word ecosystem.

The business ecosystem becomes visible through the actions of its participants, the individuals and companies that develop and deplete their human capital over time, as they compete for a finite amount of resources.

Participants have differentiated blends of productive skill and random luck that contribute to the conversion of these actions into measurable growth or decline of outcomes for the participants and for their connected relationships, all the way up to the ecosystem as a whole as it competes with other ecosystems.

Differentiated skills come in many forms that include:

- personal human capital development,
- productive partnering,
- exposure management tools, and
- ownership of outcome compounding machines.

Here are some questions that you can think about when you listen to speakers talk about business ecosystems:

- What do they mean by ecosystem?
- What is the extent of their view of the ecosystem?
- What is their place in the ecosystem?
- What is their default perspective, given their place in the ecosystem?

Here are some questions that you can ask about your own ecosystem:

- What is my business ecosystem?
- What is the extent of my understanding of it?
- What is my place in it?
- What is my default perspective, given my place in it?

Finally, here are some questions to reconcile what you hear with where you are:

- What is the difference between my perspective and the speaker's perspective?
- Why are they different?
- Where, and how, can we come to a common ground where we can make a deal?

Living in an Ecosystem

- Turbulent Flow
  - Daily Depletion of Human Capital
    - Keeping it together
- Daily Compounding
  - Financial, Social, and Other Assets
    - Build compounding machines
- Absorbing Barriers
  - Diversify, Hedge, Pool, or Avoid
    - Push fragility down-stream and to lower granularity

What are key take-aways that come from asking such questions?

<u>First, we live in the turbulent flow of growing, or shrinking, ecosystems.</u>

Ecosystems are the stages where we grow and then deplete our human capital over our life-cycle. All that we really have is our human capital, and we convert it into money in the context of our position in the energy flows of such ecosystems:

- What level of energy, and money conversion can you expect from your position in your business ecosystem?
- How do you pull your act together in order to maximize your potential for energy and money conversion from your human capital in the context of your business ecosystem?

<u>Second, having your own business means having an explicitly-built, compounding machine that capitalizes the money value of the energy conversion of your depleting human capital in the context of your business ecosystem.</u>

Implicitly (as an employee), or explicitly (as an owner), we build compounding machines for our depleting human capital. These compounding machines can include your own business, your contributions to Social Security, paying down your mortgage, collecting art, etc.

- How intentional are your about building your own compounding machines?

- As you look around the business ecosystem template, do you have the requisite components for your compounding machine?
- Most importantly, using this business ecosystem template to map where you spend your time, are you spending your time in the right places?

<u>Third, there are absorbing barriers.</u>

Your compounding machines can fail. Therefore, you need to think in terms of risk management techniques to manage our exposures, including diversifying, hedging, pooling, or avoiding risks.

- Venture capitalists win by diversifying:
    - While you want to stay uniquely focused on your own compounding machine, are you diversifying over time by retaining the ability to try more than once?
- Hedging means giving up something valuable in order to modify your risk exposures:
    - Does a venture capital investment help you push risk down-stream in order to lower the granularity of the risks that you are taking?
- Pooling is the risk management technique that translates into insurance contracts:
    - Do you need key man, and/or liability insurance?
- In order to win big, you need to bet big, however, this does not mean that you have to bet everything, all the time:
    - Are there specific risks that you should avoid?

This last risk management technique, avoidance, became clear to me in the early 1980s, when the CEO of Eagle Computer, Dennis Barnhart, died on the day of his successful initial public offering by crashing a Ferrari that he was test driving.

Following his death, the underwriters reversed the IPO, and refunded the investors. Despite another IPO a few short months later, the company failed a few short years later.

To quote Country Music's classic "The Gambler" by Kenny Rogers, it pays to *"Know when to hold 'em. know when to fold 'em, know when to walk away, know when to run."*

What to Expect from Advisors

- Affordable & Actionable Opinions (and Introductions), about your:
  - System of the World
    - Fit in the ecosystem.
  - Value Proposition
    - Fit in the Functional Stack
  - Ability to Scale Up
    - Character, Skills, Money, and the Company-You-Keep

How do you determine your available options for growth and risk management, and who should you listen to as you try to figure it out?

Back in days of the dot.com boom, there was a type of advisors that we called "energy vampires":

- They seemed to feed on the entrepreneur's energy, however,
- They did not add value.

How do you find advisors that are not energy vampires?

<u>Good advisors can improve your understanding of your own business ecosystem.</u>

All perceptions of reality are concepts that we form in our head, however, some perceptions are better than others. Good advisors can help you understand your "system of the world", and improve your decision-making process for its use in the real world.

As a starting point, are you familiar with John Boyd's OODA loop?

This is a four-stroke, and iterating decision-making process. The first "O" stands for Observation, the second "O" stands for Orientation, the "D" stands for Decision, and the "A" stands for Action.

Observing is based on analytical perceptions.

Orienting is based on an implicit synthetical modeling of observed reality based on long-term memory, using heuristics derived from primary emotions.

Deciding is based on explicit thought processes subject to the limits of attention and awareness.

Acting is based on behaviors optimized for cycling faster though our own OODA loop than competition.

This is a rapid cycle, iterative process to make correct decisions faster than the competition.

The OODA loop is a model of individual and organizational learning for adaptation to a rapidly changing environment. It is a method for the development of winning situational awareness in real time.

Decisions that must be made under the pressure of great variance in outcomes, and high-rate of change require a deliberate, yet timely, process of relevant observation, authentic orientation, deliberate decision, and effective action. The OODA loop provides such a process.

While Colonel Boyd did not write a book, his teachings are well documented in briefing presentations. One book is of particular interest for entrepreneurs because it integrates the broadest range of related issues, *Science, Strategy and War* (2007) written by Frans P. B. Osinga.

https://www.amazon.com/Science-Strategy-War-Strategic-History-ebook/dp/B00BMU6M40

Good advisors can also help you articulate your specific value proposition:

What is it that you do, and how can you explain it simply and compellingly?

Finally, good advisors can help you scale-up.

This is the rate-limiting factor between good-enough and great. Some of us can create good enough. Few of us can create great.

It is other people that take us from good enough to great. We are known for the company we keep: What does your selection of advisors say about you?

What To Expect for Yourself

- Pain
  - "Nobody Made You Do This"
  - Take the Pain
- Try More Than Once
  - VC-backed: 1 out 10
  - dot.com boom: 1 out 127
- Redemption
  - You Made it Happen
  - Monetary Rewards May Vary

This is the hard part.

No matter what, and no matter who advises you, it all lands on you.

I remember meeting an old venture capitalist in the mid-1990s because of the value that he provided even though he did not invest in the company.

After a brief meeting he looked at me, and said:

- "I am not impressed, nobody made you do this.", and
- "Take the pain, make it happen."

This was painful to hear, but he was right:

- Take the Pain. Make it Happen.

Industry lore says that venture capital backed companies succeed in a ratio of 1 to 10.

If memory serves, back in the days – in the early 2000s - when we read magazine that were actually printed on paper, "Business 2.0" or perhaps "Forbes ASAP" ran a retrospective on the dot.com boom, and found out that:

- The success ratio for start-ups during the dot.com boom was 1 to 127.
- They also reported that the successful dot.com start-ups generated average capital gains of:
  - $7MM for the venture capitalist,

  - $1MM for the founders, and
  - $100,000 to be shared by everyone else.

Take this with a grain of salt. Given the winner-takes-all, power-curve distribution of successful dot.coms, I am surprised that they would even have tried to calculate such an average.

The bottom line:
- Make sure that you have the ability to try more than once, because just about all of us will need to try more than one.

Finally, let's talk about redemption in the form of a liquidity event:
- While the monetary rewards may vary, comes the liquidity event, your life is now very different.

It feels like:
- dodging a bullet,
- jumping off a cliff, and surviving it,
- a born-again moment,
- a phase-change, etc.

It is hard to explain but you will recognize it when you experience it.

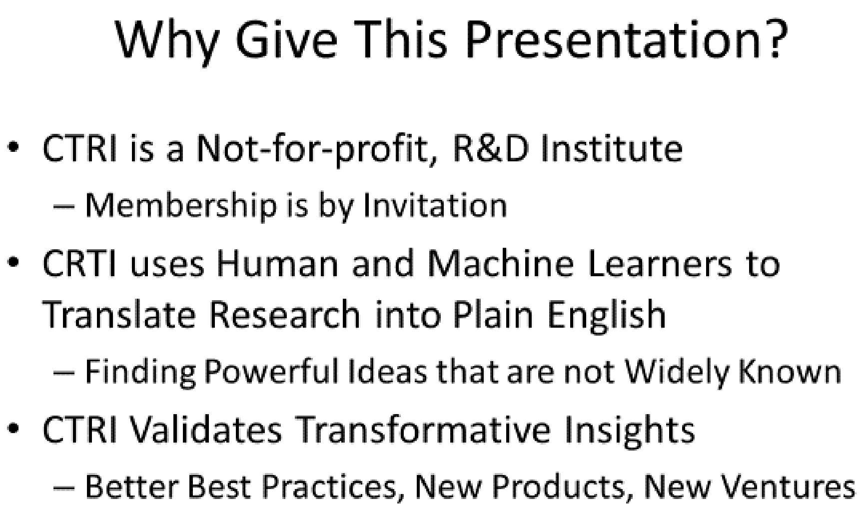
However, we never really know whether such redemption comes from skill or from luck:
- If it is all luck, mean-reversion will be fast and visible.
  - Many successful entrepreneurs have a second venture that fails.
- If it is all skill, the best prediction is the prior observation.
  - Some successful entrepreneurs have successful second, third, and more ventures.

The reality for most of us is something in-between all skill and all luck, as explained by Michael Mauboussin in his book The Success Equation.

http://success-equation.com/

Start-ups are high randomness task environments, and while many say that it is "better to be lucky than good", it is best if you can be both.

Based on the level of skill that I see at Boston's Fintech Week, all you need to succeed now is to create your own good luck.



The Curve, Triangle, & Rectangle Institute℠ (CTRI℠), is a not-for-profit, research & development institute that was founded in 2018.

CTRI combines human learners and machine readers that explore connections between academic research papers in order to:

- find the powerful ideas that are not widely known,
- flag the false positive findings, and
- validate the insights that can be transformed into better business practices, or new ventures.

Membership is by invitation only, and includes leaders from investment companies, life companies, financial distributors, and fintech start-ups.

CTRI extends the research findings of a previous venture, the Retirement Income Industry Association (RIIA), that are documented in the published paper:

(2017) IMCA Investments & Wealth Monitor:

- **"The Shapes of Retirement: Are you a Curve, a Triangle, or a Rectangle?"**

https://img1.wsimg.com/blobby/go/9df5ee44-13e5-4d5d-b09e-3b10908c1568/downloads/1d1etmh1l_143128.pdf?ver=1577053436526

From time to time, members approve a limited number of these findings for publication, based on their importance for the industry at large.

Findings that are currently approved for publication include:

(2018) CTRI Website, and Membership Note #1:

- **“How to Read Research Papers with a Discerning Eye”**

https://img1.wsimg.com/blobby/go/9df5ee44-13e5-4d5d-b09e-3b10908c1568/downloads/1d3fft2nb_749898.pdf?ver=1577053436526

(2020) IWI Retirement Management Journal, and Membership Note #3:

- **“Ergodicity Economics in Plain English”**

Public peer-review:
https://researchers.one/articles/ergodicity-economics-in-plain-english/5f52699d36a3e45f17ae7e4e

Pending publication in the Q4 2020 edition of the Retirement Management Journal:

https://investmentsandwealth.org/publications/retirement-management-journal

(2020) RESEARCHERS.ONE – Public Peer-review, and Membership Note #3B:

- **“Expected Value Optimization, Client-centric Planning, & Growth Optimal Selection: A Centuries-long, Three-braided Conceptual Chronology”**

Public peer-review:
https://researchers.one/articles/Expected-Value-Optimization-Client-Centric-Planning-and-Growth-Optimal-Selection-A-Centuries-long-Three-Braided-Conceptual-Chronology/e2198c63dc750310a3d6ffcb

The purpose of this presentation is to find kindred spirits as we build up the requisite, successful relationships in our own business ecosystem.