



## THE SECRETS AND RULES OF DISRUPTIVE INNOVATION YOU MUST KNOW

*"Our imagination is the prison we live in; unleash your imagination"*

In my childhood and youth, I never heard the term "entrepreneur." Instead, we used the word "pioneers" to describe those young people who were the first to do something.

Many of those pioneers were Holocaust survivors, yet they are the ones who created modern Israel as we know it, including its thriving agro sector. One of their innovations was the disruptive business model and lifestyle we call *Kibbutz*.

The Kibbutz movement produces 40% of Israel's agricultural produce and 16% of its industrial exports (excluding diamonds and high-tech). It also brought us many world-wide famous innovations, such as the dripping irrigation and the cherries tomatoes.

This wouldn't be "a big deal" if you didn't know that only 1.5% of Israel's citizens live in the Kibbutz, from which over 90% don't practice agriculture.

The Kibbutz's economic success wouldn't be possible without continuous innovation. I consider myself lucky to be born on a Kibbutz.

## WHY DO WE INNOVATE?

When I was in fourth grade, the teacher addressed the class and asked us to invent something.

I tried hard but couldn't think of any invention. I felt frustrated, thinking I was born "too late" after everything worthwhile was already invented.

You see, the first step to innovation is realizing that something should and can be changed by introducing novel technologies, methods, or models. But at ten years old, my world was near perfect (low expectations?), resulting in no need for change and hence innovation.

However, not being able to innovate upon the teacher's request was a humbling and frustrating experience for the young Nimrod, who dreamed of being an innovator like his uncle.

It took eighteen more years and a strong **internal** need to bring a change before I had my first "worthwhile invention" and change. Following, but years later, I established my own company called Biofeed, which introduced a major crop protection product, which I call Freedom.

The process I went through taught me that inventions are not the starting point of change but the result of continuous efforts to end "a painful situation."

Yes, innovation, like giving birth to a child, is the outcome of your painful experience. YOU decide what is "painful," and YOU determine the kind of innovation to "cure" the pain/challenge.

Hence, innovation is **personal**; it reflects YOU as you reflect the pain you observe and wish to cope with.

## SETTING THE BAR

I am involved in three activities related to the agro sector. Each one has enormous potential to make a global impact.

Each of these activities stems from a unique "pain" I experienced, resulting in innovative solutions to change and impact the things I care about.

**Biofeed** – Freedom technology enables farmers to grow without pesticide sprays.

**Dream Valley** – rapidly improves farmers' income and livelihood. A novel business model dedicated to small-hold farmers generates the selling of spray-free produce at premium markets for a premium price.

**The International Conference On Business Models In Agriculture (IBMA)** – to let stakeholders in the agro sector know that novel business models (e.g., the Kibbutz and the Dream Valley models) can be used to transform farmers' poverty into prosperity.

Whether it is the introduction of a novel lifestyle (Kibbutz), ridding of pesticide sprays (Biofeed), improving farmers' income and livelihood (Dream Valley), and spreading knowledge about ways to improve farmers' livelihoods (IBMA), the goal to create a positive impact through innovation, remained unchanged.

Out of the three types of innovations described by Prof. Clayton Christensen, i.e., Disruptive, Sustaining, and Efficiency, only Disruptive Innovation enables frog jumps and shortcuts to considerable massive and fast changes and impacts.

To deal with some of the 17 UN SDGs (e.g., poverty and hunger) or global warming and other grand challenges, we must use the Disruptive Innovation path or risk the related adversity of changing too slowly and late.

**Anyone can create disruptive Innovation for everyone.**

Many of the things we use daily began as Disruptive Innovations, e.g., credit cards, smartphones, and cars ([more examples](#)).

## **WHAT IS DISRUPTIVE INNOVATION?**

Prof. Clayton Christensen coined the term "Disruptive Innovation." Following is how the Christensen Institute presents **Disruptive Innovation**.

### **Definition:**

Disruptive Innovation transform -

From (A) An expensive and complicated product or service that is suitable for few people,

To (B) Affordable, accessible, easy to use (with basic features), and suitable for many people.

### **Characteristics:**

Often starts as a product/solution that is not good enough to compete with existing technologies in existing markets.

Disruptive Innovation tends to target the low end of the market, where leading companies view customers as less profitable or focus on a market niche where non-consumers have no alternative.




**Disruptive Innovation's Three Components:**

- \* An enabling technology.
- \* Innovative business model.
- \* Coherent value network.

**Disruptive Innovation's Impact:**

It can positively impact the masses by changing industries, the economy, the environment, and traditional business. Disruptive innovation can make high-cost industries like agrotech, communication, global development, and healthcare more affordable and accessible.

**WHAT MAKES A SUCCESSFUL DISRUPTIVE INNOVATION?**

Enabling Technology	Innovation Business Model	Coherent Value Network
<p>An invention or innovation that makes a product more affordable and accessible to a wider population.</p>	<p>A business model that targets nonconsumers (new customers who previously did not buy products or services in a given market) or low-end consumers (the least profitable customers).</p>	<p>A network in which suppliers, partners, distributors, and customers are each better off when the disruptive technology prospers.</p>

**> Digital Leadership**

**EXAMPLES**

**Anyone can be the creator of Disruptive Innovation, but only a few do.**

To prove that ANYONE can create Disruptive Innovation in any field, here are three examples; one from a big Global company and two from small agro-related companies where I am involved.

### **EXAMPLE 1 - Computers**

**Old: Mainframe computers** – cost \$ millions and are complicated, suitable to use by a few rich and specialized organizations.

**Disruptive: Laptop computers** – cost \$ hundreds, are easy to use and are suitable to use by many people.

### **EXAMPLE 2 – Agriculture; Crop protection (e.g., for fruit flies)**

**Old 1: Sterile Insect Technique, SIT** – Expensive, complicated, unavailable, and inaccessible by many, only partially suitable for the few rich or well-financed organizations or countries.

#### **Key points:**

- Development time and cost per “new” pest - decades and tens/hundreds of \$ millions, with complicated/costly infrastructure (production factory, etc.).
- Maintenance - requires a weekly complicated and costly application and daily operation of the sterile flies’ factory.
- Limitations – not so effective in low/high temperatures and rainy conditions. Unsuitable for small-scale orchards or where the pest population is high (which is the typical case).
- Effectiveness – after +70 years in use, SIT is still unavailable for most fruit flies, with low efficacy for the few available. Ineffective in the presence of more than one fruit fly species. Not a stand-alone solution.
- Farmers’ income increase/decrease – unchanged for decades.

**Old 2: Pesticide sprays** – costly, dangerous, using poisonous chemicals, complicated application, ineffective for many fruit flies, and mainly used by well-financed professional farmers (3%).

#### **Key points:**

- Development time and cost per “new” pest - decades and hundreds of \$ millions.
- Maintenance - Requires a weekly (or more) application using costly and complicated machinery, i.e., tractors, sprayers, and water.
- Limitations – ineffective in low/high temperatures, windy and rainy conditions, tall trees, and many limitations due to being poisonous, which makes it unsuitable for area-wide pest management.
- Effectiveness – after +100 years, sprays are still ineffective for most fruit flies of economic importance. Not a stand-alone solution.
- Farmers’ income increase/decrease – unchanged for decades.

\* While using Old 1 and Old 2 crop protection approaches, suitable for a few wealthy professional farmers (about 3%), most small-hold farmers experience –

- (a) A high level of yield loss, including by the #1 fruit fly pest, *Bactrocera dorsalis* (30%-80%).
- (b) A need for post-harvest treatment before export.
- (c) Enormous export challenges due to infestation and chemical residues.
- (d) Farmers' income is not rising as they suffer persistent poverty.

\*\* Developed economies suffer too from high infestation (i.e., over 5%) when encountering most fruit flies, for example -

*Bactrocera oleae* (in Europe)

*Bactrocera dorsalis* (USA)

*Bactrocera tryoni* (Australia)

### **Disruptive Innovation: Biofeed's GCFR technology (the Freedom solution) –**

Broadly accessible, available, and inexpensive for organizations/countries wishing to develop a new pest control solution for farmers.

#### **Key points:**

- Development time and cost per “new” pest –1% to 5% versus Old 1 and Old 2.
- Maintenance – zero maintenance. No need for infrastructure, machinery, and skilled personnel.
- Limitations – effective at various agriculture climate environments; high/low temperatures, rainy, humid, dry, windy. Suitable for low/high plants. Pest-specific (harmless to humans/non-target), has zero chemical residues, unlimited by proximity to people/settlements, and is suitable for small and large-scale pest management projects.
- Effectiveness – reduce infestation by 90% - 99.9% versus Old 1 and Old 2, effectively control multiple species, typically a stand-alone solution in 99% of cases (i.e., making sprays redundant).
- Farmers' income increase/decrease – typically by over 50% in the first year.

Bonus: At the end of the column is a fruit fly management comparison table of system approach solutions for mango growers. The Biofeed system is an integral part of the Dream Valley business model.

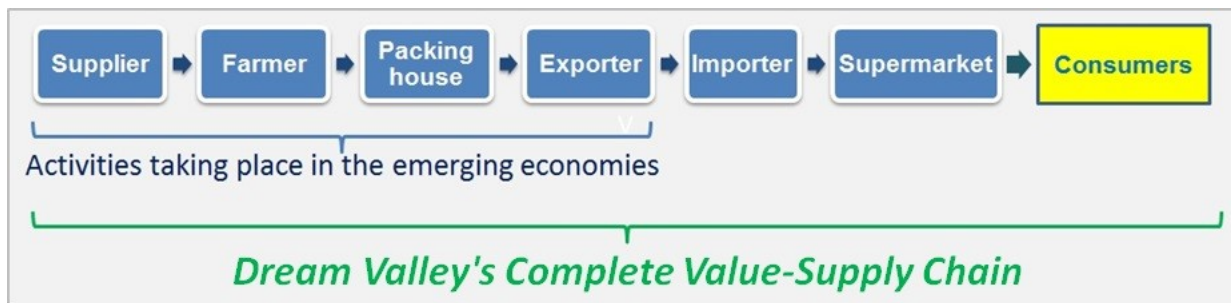
### **EXAMPLE 3 – Agriculture, Fresh Produce Value & Supply Chains, FPVSC (e.g., Mangos for export from developing economies)**

**Old value chain:** Input providers, financing institutions (banks), traders, service providers (logistics, packing, etc.), exporters, importers, and supermarket chains.

#### Key points:

- The number of links in the Old value chain – long, with many loosely coupled parties/links.
- Long FPVSC - increases inefficiency, creates negative added value due to increased cost of technology/service by each chain-link.
- Supply and value chains are fragmented with an inherent conflict of interest.
- The ecosystem is fragmented, fluid, and unstructured.
- Easiness level for farmers to deal with the FPVSC - not easy at all.
- Small hold farmers' access and availability of state-of-the-art technologies and services – none!
- The internal motivation of the Old value chain – to sell as much as possible technologies and services at the highest possible price while reducing financial exposure (in conflict with farmers' interest in buying at a low cost).
- Alignment of business interests with farmers – low (inherent conflict of interests).
- Inputs provider income – paid up-front before delivering the inputs.
- Exposure to farmers' negative business results – low to not existing.
- Need for trust building - low.
- Long-term interest in small-hold farmers' success – low.
- Creating and adding value and differentiation – little; mostly price-oriented.
- Ability to reach global premium markets – low.
- Contribution to the national export increase – little, if any.
- Contribution to small-hold farmers' income increase – small-hold farmers' income **decreased** by 50% in the past ten years.
- The business model used - payment per technology or service provided. **Not a novel model.**
- The enabling or innovative technology – **none**.

**Disruptive Innovation: Dream Valley – End to End (E2E)**, dedicated **complete** value-supply chain for small-hold farmers. The E2E FPVSC starts with supplying farmers' inputs and then marketing their produce to end-buyers, e.g., supermarkets.



### Key points:

- Dream Valley combines the AgroTech and the food value and supply chains into one (1) holistic synchronized chain.
- Harmonious supply and value chain.
- The number of links in the Dream Valley chain – 1 (YES – ONLY ONE!).
- Fewer links lead to lower operational costs and more income for farmers, technologies/service providers, and partners.
- Harmoniously united ecosystem.
- Farmers' number of contact points – Single point of contact, Dream Valley.
- Easiness for farmers - very easy and well-understood.
- Farmers' access to state-of-the-art technologies/services – high.
- The internal motivation of the Dream Valley – to sell maximum produce at the best price (aligned with farmers' motivation and desire).
- Alignment of business interests and operation goals with farmers – high.
- Inputs provider income – deducted from farmers' income **after** selling the produce.
- Exposure to farmers' negative business results – high.
- Need for trust building - high.
- Long-term interest in small-hold farmers' success – high.
- Creating and adding value by differentiation – high; mostly quality-oriented.
- Ability to reach global premium markets – high and broad.
- Ability to contribute to the national export increase – high.
- Ability to contribute to small-hold farmers' income increase – high.
- Business model – novel, based on the successful, innovative Israeli model.
- The enabling technology – Freedom, powered by Biofeed's innovative GCFR technology.

## THE PATH TO DISRUPTIVE INNOVATION

Disruptive Innovation can appear anywhere from anyone

It can be generated by a global giant (i.e., Apple) or small companies (e.g., Biofeed and Dream Valley).



The point is – Disruptive Innovation is possible by anyone, and to face Global Challenges, we need it now more than ever.

Disruptive Innovation has a higher probability of appearing when there is a sense of urgency and the feeling of "*I/we have to do X*" or "*I/we must achieve X*."

Oh, and being too down to earth is not helping in the case of Disruptive Innovation while being "unrealistic" is an advantage.

David Ben Gurion, the first Israeli Prime Minister, used to say about Israel, and I suggest we embrace its spirit for Global Challenges too:

*"In the Land of Israel, a person who does not believe in miracles is an unrealistic person."*

*"Those who want to make history should forget history."*

My experience shows that no one is too small to make a significant change and impact; make yours today.

Innovation of any type, particularly Disruptive Innovation, requires imagination, the ability to dream, courage, passion, determination, and self-belief to turn it into reality.

History proves that those are not the big companies that bring Disruptive Innovation but single entrepreneurs or small companies who FEEL "they must..." (e.g., Steve Jobs, Bill Gates, Edison, etc.).

The common denominator is that in all cases, the entrepreneurs set a goal that seemed impossible and defied the logic of most people and experts when set.

To bring the innovation we desperately need, be different!

From now on, ask not "*What can I do to improve things?*" but "*What is the **result** I want to achieve?*" and then suggest a different route, your way, to reach that result.




You can start by attending the *International Conference On Business Models In Agriculture* (IBMA), March 27-29, 2023, in Kigali, to learn more about business models as the Disruptive Innovation engine.

You can also join Dream Valley investors and business partners to practice Disruptive Innovation at its finest immediately and impact millions.

IF YOU LIKE THIS COLUMN, PLEASE SHARE IT WITH FRIENDS WHO SHOULD KNOW ABOUT IT.

# TAKEAWAYS

- **DISRUPTIVE INNOVATION** transforms an expensive and complicated product/service with an affordable and accessible product/service, using an innovative business model in a coherent value network.
- **DISRUPTIVE INNOVATION** helps achieve a frog leap to industries and economies at massive scales.
- **ANYONE** in any field can introduce Disruptive Innovation.

System Approach Solutions - Comparison			
	SIT	Hot Water Sanitation	Dream Valley 
<b>Applied WITOUT Government/Industry investments</b>	<b>NO</b> Three factories are needed, one for each species of fruit fly. Cost with factories' operation and deployment expected to exceeds 100M USD for 10 years/ 10K Ha. area.	<b>NO</b> Post-harvest treatment facilities and post-harvest operation cost may exceed 10M USD for 10 years operation.	<b>Yes</b> Cost-effective operation. Operated privately, based on existing fruit fly control budget spent today by farmers, with some charges from the extra income generated.
<b>Immediate availability</b>	<b>NO</b> 5 years for Proof-Of-Concept, 7 years for Operations.	<b>NO</b> 2 years for Proof-Of-Concept, 3 for Operation.	<b>Yes</b>
<b>Crop Loss Avoided</b>	<b>Maybe</b> No Proof-of-Concept for <i>B. dorsalis</i> and <i>Ceratitis cosyra</i> .	<b>NO</b>	<b>Yes</b>
<b>Optimal Harvest Time</b>	<b>NO</b> Harvest end at early rainy season. Mangoes picked pre-mature.	<b>NO</b> Harvest end at early rainy season. Mangoes picked pre-mature.	<b>Yes</b> Harvested when mature.
<b>Residues Avoided</b>	<b>NO</b> Sprays continue.	<b>NO</b> Sprays continue.	<b>Yes</b>
<b>Export Entire Season</b>	<b>NO</b> Until rainy season only.	<b>NO</b> Until rainy season only.	<b>Yes</b> Export at any time.
<b>Applicable to all farmers, big and small.</b>	<b>NO</b> Only to framers within the SIT region (areas over 10,000 Ha.).	<b>NO</b> Only to framers with access to hot water sanitation facility.	<b>Yes</b> To any farmer/association found eligible, with >50 Ha.
<b>Farmers Income Increase</b>	<b>NO</b>	<b>NO</b> Further reduced by additional post harvest process expenses and degraded quality. 	<b>Yes</b> Avoiding crop loss, increased quality, full export season and safe-guarding exports. 

Bonus table: Comparison of three fruit fly management systems for mango growers. Two systems, i.e., SIT and Hot Water Sanitation, are based on routine sprays, versus the Dream Valley, which is not.

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**\*\*\* *Mental and Economic Freedom Are Interconnected* \*\*\***

See you soon,

Nimrod



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**P.S.**

If you missed it, here is a link to last week's blog, "[How Israeli Agrotech Can Access, Impact and Benefit From 97% of Global Farmers; "The Transparent Farmers?"](#)"

Link to [recent columns](#).

**P.P.S.**

[Start-Up Nation Central welcomes delegation of UN ambassadors for Israeli innovation](#)  
(The Jerusalem Post)

**P.P.P.S.**

[The IBMA](#) conference provides the stage to share your experience with agriculture business models and learn from others.

**P.P.P.P.S.**

[Dream Valley](#) is a field-proven disruptive business model based on the successful Israeli model. Contact me if you view yourself as a potential investor, business partner, or client. [Email](#), +972-542523425 (WhatsApp/Text)

**P.P.P.P.S.**

Please look at the video series "[The Agricultural Gap](#)." I explain the historical roots of the agricultural gap between African and Western countries with short videos.

I see this video series as "uncompleted," as I am waiting to gain more confidence before completing the chapters with The Solution, as I perceive it.

If you like it, don't forget to **share** it with those who need to see it and **Subscribe**.

***Change Begins With A Decision  
That The Existing Reality Is A Choice  
And Not A Decree of Fate***