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Research Paper

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An exploration of the ankle-biters and their role in business ecosystems

Innovative firms evolve, positions shift, and markets realign due to the dynamics of innovation. The role of innovations in reconfiguring markets and economies is well understood. The schools of thought that guided this understanding in erstwhile literature are based on ecological principles, institutionalism, and industrial economics. Whatever the side of human ecology, population ecology or industrial economics, all agree that new entrants disrupt incumbents on both a spatial, a temporal, and a magnitude basis. The Marketing Science Institute's research priorities highlight the term ankle-biters. Further research into this term in different databases revealed very few publications. This study is therefore a modest attempt to add value towards the understanding of the term, „ankle-biters," by tracing the etymology, understanding the significance, integrating it into current contexts, and adding to the body of knowledge associated with the term. In 2018, the term „ankle-biters" gained massive traction in the business world. In order for firms to evolve successfully in business, there needs to be convergence and encapsulation of fine touch points, which limit the ankle-biters' ability to destabilize the existing business model. A firm in the Technology sector can facilitate this understanding (since technology is the biggest disruptor) which faces numerous ankle-biters in different configurations. We need to devise a classification mechanism that facilitates a coherent, structural understanding of ankle-biters.

1 Introduction

This study addresses the void created by business innovations that reduce the growth pace of established businesses because they keep on hurting the ankles. Scholars (Adner, 2017; Jacobdies, Cennamo & Gewar, 2018; Iansiti & Levien, 2004; Moore, 1993) have vaguely identified the enterprises that enable new configurations by means of transformation and contribute to ecological drift. The most common focus of business literature has been towards growing and developed companies, if not, then it has been a discussion of successful industries, especially those that have an easy data collection process. Based on Nutanix as an example, it intends to dominate the world of hyper-converged infrastructure and everything software. According to Dheeraj Pandey (2018), the Nutanix CEO, every infrastructure in the next three years will be hyperconverged, and he deems the rivals to be ankle-biters.

Taking into account the views expressed, we can interpret ankle-biters as non-threatening entities that cannot put existing businesses at risk. Another equally compelling lens

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views ankle-biters as small, niche brands that impede the growth of large consumer goods companies. As a result, the notion of ankle-biters is shaped by the managerial understanding of the businesses' susceptibility to risk by new entrants.

Additionally, the pesky ankle-biters also threatened retailers, whose cumulative impact hampered growth. Even though the ankle-biter phenomenon has been growing for over a decade, it is one of the authors' top predictions for how the world of retail will change in the near future. Due to factors such as technology, social media, e-commerce, and shifting consumer preferences, ankle-biters are well suited to meet fragmented demand.

With the advent of social media, it has never been easier to build a personal brand. An individual who pursues a passion often gains a following and a level of celebrity that can be translated into product sales. Those who plan to be merchants can simply use digital communication methods to connect directly with shoppers seeking niche items not readily available in local stores. Through Google's capabilities or by participating in one or more of the third party marketplaces, these merchants are able to reach millions and millions of potential shoppers.

One of the best examples of this is Amazon's FBA (Fulfilled by Amazon) program, which allows small merchants access to a highly advanced supply chain network and an ever-expanding system of fulfillment centers. Anyone with access to inventory and an Internet connection can operate as a brand or retailer, supported by marketing, merchandising and supply chain capabilities as sophisticated as those available at some legacy companies.

The ankle-biters can range from multi-billion dollar companies with conventional retail distribution to thousands of much smaller companies using e-commerce marketplaces or shipping products from their garage. They don't even reach ankle height and their sales aren't included in any Nielsen or IRI reports. The existence of ankle-biters can only be verified by sales and traffic weakness at established retailers, which makes ankle-biters seem like an odorless and colorless gas.

This is why the ankle-biter effect is so frustrating and different from competitive challenges of the past. For example, in the 90s, if Walmart opened a 200,000-square-foot supercenter near an aging Kmart store, Kmart would know who took its share of the market. However, the same is true to a lesser degree today when it comes to rapidly expanding chains such as Dollar General and Aldi. It is easy for competitors to identify either of these as a weak point when they open nearby.

In the current ecosystem, ankle-biters will continue to exist. It will persist and intensify in the coming years and become even more of a competitive issue. However, there is a solution and it doesn't require going head-to-head with Amazon or Walmart to offer an endless aisle marketplace. It does mean that innovation has to accelerate in organizations at a rapid pace, something we often hear, but rarely see - to provide the uniqueness and personalization that makes shoppers receptive to ankle-biters.

In addition to factors like better assortment planning, leveraging new sources of insights for personalized offers, focusing relentlessly on the supply chain to more efficiently flow goods, eliminating waste, and implementing new fulfillment models such as click-and-collect or home delivery, there are a number of other things to consider. Food retailers in particular need to be more aggressive about adopting a digital-first philosophy, utilizing stores to drive traffic to their Web sites and exposing shoppers to a universe of products that physical stores cannot offer.

The ankle-biters will continue to gnaw at the market share of established retailers, moving up the leg of the vulnerable who are deluded about the relevance of their stores or the extent of digital advancements. If that makes for a disturbing visual - that's a good thing, because no retailer should be looking in the mirror several years from now and regretting not having acted sooner (Troy, 2018).

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2 Literature Review

For a business, technological innovation is often a key to survival and a source of sustained growth, but it is also expensive and difficult (Schumpeter, 1934). The concept of market-to-market competition has been a subject of intense academic inquiry ever since Schumpeter brought it to light and its equivocal creative and destructive implications. It is Christensen (2000), which describes instances in which entrepreneurs touting inferior technologies disrupt established firms with superior technologies (Danneels, 2004). The „innovator's dilemma" is the fact that well-established and well-run companies can lose customers by doing the right thing by listening to their customers - upstart firms that offer new technologies for which no customers as yet exist (Dew, 2008).

Figure 1 shows the performance trajectory of products (the red lines showing how they improve over time) and the performance trajectory of customer demand (the blue lines showing the willingness of customers to pay for performance). The high-end of the market (where profitability is greatest) demands higher-quality products and services from incumbent companies (upper red line), overshooting the needs of most low-end and mainstream customers. In a less-profitable segment that incumbents neglect, this provides an opportunity for entrants to gain a foothold. In a disruptive market (lower red line), entry-level companies improve the performance of their offerings and move upmarket (where profitability is highest for them, too), challenging the incumbents' dominance (Clayton M et al.,2015).

3 The ankle-biter economy

In the 18th century, the industrial revolution brought with it strict barriers to entry in businesses, huge investments and high raw material prices, large scale production and inventories, thus favoring large industrial giants. The factors above led to a small number of businesses flourishing back then. But the world seems to have progressed from this scenario, leading into a new dynamic of digitally driven economic revolution by creating a new governing algorithm in which large numbers of admirably aggressive, bumptious individuals and startups can and will bring down established and formerly unassailable big incumbents with regularity (Maney, 2013). In the business world, incumbents are companies, brands, academic institutions, media franchises, and politicians.

This is what is known as the „rise of the ankle-biter economy". The ankle-biter economy represents a turbulent new reality where nothing is sacred or safe. In order to study how this change occurred, we need to first understand how ankle-biters originated.
The term ankle-biters was first used in 1850 by Gary Martin in Harper's Magazine, saying: „And how are you, John?" and, how's Molly, and all the little ankle-biters?" Here the term "ankle-biters" refers to children. We can therefore infer that this term describes the characteristics associated with kids, such as being mischievous, creative, and active (Martin, 1850).

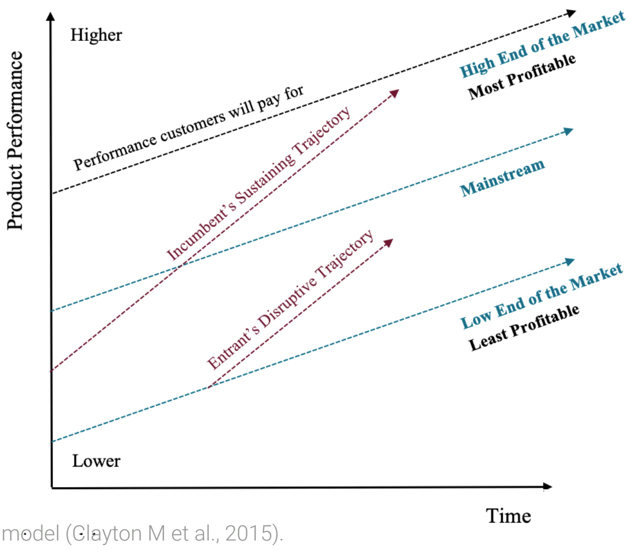

Figure 1 The disruptive innovation model (Clayton M et al., 2015).

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Table 1 Meanings of ankle-biters in different contexts (own representation).

Context	Meaning
Small	When we refer to ankle-biters as small, it refers to their size of business, but the value or volume of their business is hard to quantify.
Niche	The Cambridge dictionary defines the term as an opportunity for a business to provide a product or service that is not currently available which can be interpreted as bringing a unique and new product to market.
Newcomer	A player who has recently entered the market may be inferred here.
Flexible	According to the Cambridge Dictionary, it is something that can change according to the situation, which means that it isn't static.
Invader	Anyone who takes over properties that were previously occupied by others, meaning ankle-biters, are taking away market space and customers from already established companies.
Innovator	The Cambridge dictionary defines it as someone who introduces new ideas and changes

As defined in Partridge's dictionary (1984), the term describes pants styled after the pants worn by Hussars, the Hungarian light cavalry of the 15th century, which had the bottoms tucked inside the stockings to keep them from touching the stirrups. The attributes can also be associated with something that is pliable, flexible, or will take any shape. On the other hand, the term has also got a financial definition, which states, a „small-cap" company is one whose stock is issued with less than half a billion in capitalization. Or maybe it's less than one or even less than two billion (Farlex, 2004). In The Washington's Post (2018), Elon Musk's company SpaceX, while initially described as an ankle-biter, was later described as a serious competitor. According to this, we can conclude that the term is used to describe something that is annoying, but which cannot hurt because it is in its early stages and cannot harm anyone (Koren, 2018). Although the term hasn't been extensively used, it has been employed in a variety of contexts which will help us define it more comprehensively.

The topic of this research paper is part of the Marketing Science Institute's 2018-2020 research priorities. The report describes ankle-biters as ‚small, new entrants eating into firm's market share'. Troy (2018) identifies ankle-biters as small, niche brands contributing to the growth challenges of large consumer goods companies. Previously, Maney described ankle-biters as „large numbers of admirably aggressive and bumptious individuals and startups capable of bringing down established and previously invincible big incumbents frequently". Hiscock (2016) states that small, flexible players may seem like a nuisance to you. They want a piece of your customer base. In fact, they may not even register on your radar. However, this kind of shortsightedness will only increase the vulnerability.

From these descriptions, some characteristics of ankle-biters can be gleaned, such as the fact that they are small, niche, newcomers, flexible, and invading, cutting into the market share of old incumbents. In order to gain a clear understanding of the term ankle-biters, the authors examined each of these characteristics separately.

Therefore, ankle-biters can be defined as „newcomers who are nimble and flexible in their operations and capture the share of incumbents with innovation".

4 Classifying the ankle-biters

Ankle-biters can be categorized according to two criteria:

- Market Reach: Some ankle-biters target niche segments, while others focus on producing products for the mass market.
- The amount of total funding received: This criterion helps determine the size of a particular ankle-biter, or to put it differently, the extent to which the ankle-biter is functioning, and how much it is expected to grow over time.

Four quadrants of the matrix have been named sustainers, breakthrough players, experimenters, and explorers.

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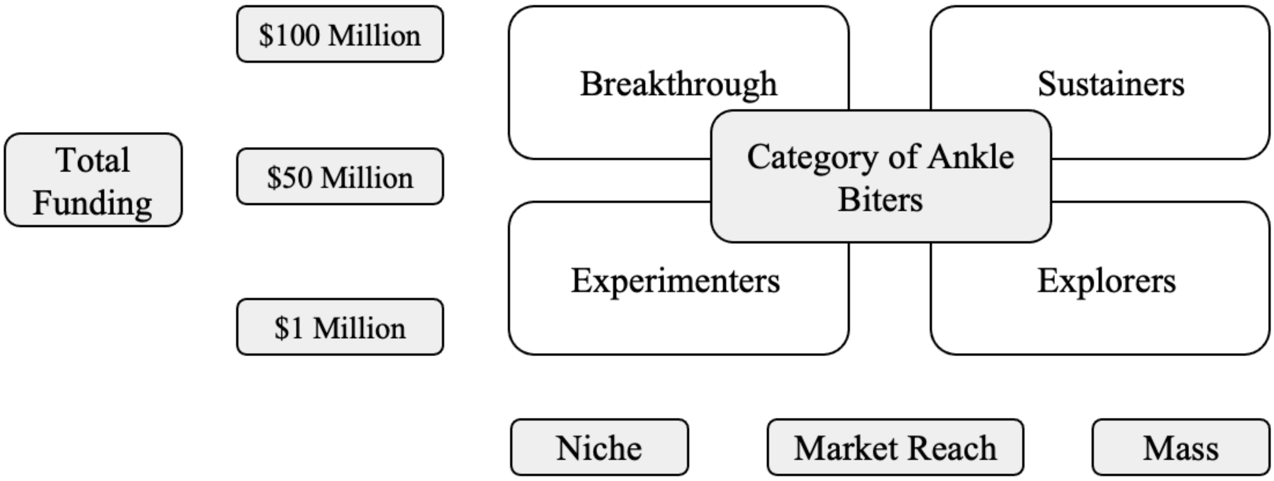

Figure 2 Classification of the ankle-biters (own representation).

5 Lifecycle stages of ankle-biters

Neil et al. (1983) discuss the stages of growth in small businesses. We will examine these stages and see how ankle-biters progress through their lifecycle.

There are five stages for the growth of ankle-biters:

1. In the Existence Stage, you will be in the process of finding customers, getting your products and services to market, and working to provide the cash to fulfill all of this phase's cash requirements. The owner manages everything here, and there is no formal planning or system. A company in the existence stage can be a newly started restaurant or retail store or a high-tech manufacturer that has not yet standardized production or quality.

2. As the business approaches its survival stage, it has customers and focuses on maintaining its revenue and expense relationships. The goal is to generate enough cash to reach break-even and remain in business.

3. At the success stage, owners must decide whether to exploit the company's successes and expand or maintain its stability and profitability so that other activities can be undertaken.

4. The take-off stage involves managing the rapid growth of a business and managing the financing of the growth. Here, the emphasis is on delegating responsibilities by the owner and managing cash flow for continuous growth, operational planning, and strategic planning.

5. The resource maturity stage involves managing a company that has grown and is bringing financial gains. It involves increasing the workforce, professionalizing the systems, and creating strategic plans without sacrificing the flexibility of the organization.

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6 Rise of the ankle-biters

Maney (2013) attributes the rise of ankle-biters to easy access to capital, technology that costs 1/1000 of what it did 15 years ago, and exchange-type platforms offering everything from Chinese manufacturing capacity to skilled engineering labor.

Businesses don't always succeed when they enter the market. First, the sense of ‚urgency' is a factor that contributes to their success. Most new businesses have limited resources and funding. If they can't reach the next milestone, whether it's becoming self-sustaining through sales or getting to the next stage with a venture capitalist, they're doomed. That level of urgency, that drive to move quickly, just doesn't exist inside most large organizations (Stacey et al., 2019).

Second, the decision-making process is decentralized, where decision-making is also delegated to lower levels. As a result, actions can be taken quickly and the results can be achieved quickly and with agility. Uber's General Manager Beth Huddleston stated that they were able to innovate rapidly because of the way they were organized. The decision-making was pushed down as far as possible, resulting in city teams setting prices, negotiating deals with sports teams, and doing all kinds of things that should be handled centrally in a much more mature organization. In that way, he thought, they could get from here to there. At lower levels, decision making can sometimes be a risky business due to lack of experience, or impromptu decisions (Stacey et al., 2019).

The third characteristic is the innovative mindset of small organizations. Innovation is usually left to the top management in large and established companies. Many leaders outright reject the idea of innovating something new out of fear of failure and loss of credibility, which is passed on to their employees as well. Most incumbents follow past successes as their current practices and use them as templates for the future. In this way, people within the same environment suffer from organizational gravity, which prevents them from thinking beyond a limit or stepping outside of their current approach to form a new approach. This is what separates a new entrant from the established players. They explore, take risks and innovate; they do not have any fixed practices (Devaiah and Narang, 2013).

7 Types of Disruptions

Disrupting the market space in several ways is what an ankle-biter does:

1. **Expand market reach:** This includes expanding market reach through digital marketplaces which can serve as bridges between fragmented buyers and sellers. Digital platforms have lower margins, making it difficult for brick and mortar incumbents to compete. While digital platforms provide customers with a large catalog of products without maintaining large inventories, incumbents seem to be losing out on this front as they spend many resources maintaining physical assets. Amazon, which has capitalized on the rapid growth of the internet and displaced many brick and mortar bookstores, is the biggest disruptor in this field.

2. **Converge products:** It involves merging products to create a product that provides more value to the customer. The most prominent example is the smartphone, which integrates everything from an alarm clock to GPS to a music player to a camera and more.

3. **Unbundle products and services:** It involves breaking down mass-market products into narrower, more specific products. In this way, producers can offer more competitive prices for their individual products. Craigslist, for instance, unbundled classifieds from newspapers by being a classified-specific platform, which provides consumers with access to more content.

4. **Turning products to product platforms:** It involves the development of a flexible product that can be further customized by third parties and sold to the final customer. The most well known example of this is the open-source Android OS, which challenged the then well established Symbian OS by allowing third parties to provide various product offerings.

5. **Shorten the value chain:** By eliminating certain stages of the value chain, new entrants aim to shorten the value chain and provide value to customers. In the healthcare sector, for instance, telemedicine is becoming increasingly accepted, which makes healthcare easier and more convenient for customers.

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6. **Unlock adjacent assets:** It includes utilizing the underutilized resources in the adjacent market to meet the demands of the existing market without having to own assets. Uber, for example, operates on this model.

7. **Distributed product development:** Under this model, many third parties participate in the product design and development so that higher value will be generated. This model allows innovation to emerge from multiple sources, for example, Wikipedia uses a similar model to allow third parties to publish data on the platform; similarly, Tripadvisor lets customers post reviews and opinions which disrupted the travel book and magazine market.

8. **Align price with use:** It replaces fixed pricing with usage-based pricing. Instead of having their own data processing units, which would cost around 1.5 million euros, customers can use the Amazon Web Services for almost half the price and can access their data whenever they want.

9. **Connect peers:** A distributed governance structure that enables market participants to interact directly with each other in a trusted environment increases the visibility of interaction data by replacing centralized authority and intermediaries. OpenBazaar, for example, is an open source P2P platform that lets you exchange goods using bitcoins.

8 Ankle-biters in Healthcare Industry

In today's era, traditional hospital-based healthcare is being replaced by home-based healthcare. The advent of robotics, deep learning, data analytics, genomics, and 3D tissue printing will lead to a more virtual, distributed health system. Health data digitization - known as Internet of Things in Healthcare - is growing rapidly across the globe and is being used in delivering healthcare services. IoT has grown exponentially in healthcare as a result of COVID-19. IoT in healthcare is impacted by several rapidly evolving technologies that are converging.

Listed below are some of the medical technology companies in India that are funded by venture capitalists and whose products are thriving in emerging markets, like India, as well as in developed markets, like the United States of America and Europe.

1. The Delhi-based start-up Invictus Oncology has created a drug that penetrates deep into tumors, shrinks them by cutting off their blood supply, and sits on them until they die. This technology was developed by the scientists in Harvard Medical School and further refined by the group of scientists in India.

2. A startup focused on stem cells, Stempeutics Research, is developing a point-of-care medical device for separating stem cells from humans in alliance with Vignani Technologies, a niche engineering services company. The device will be called Stempeuron. A stem cell machine extracts high-quality stem cells out of the tissue quickly, whereas current procedures involve bringing fat tissues to the lab and processing them for isolation of stem cells, which take time, are cumbersome and have a low viability rate.

3. The ‚OncoprintR' technology was developed by Mitra Biotech, a Bangalore-based biotechnology company, to help doctors differentiate with a great deal of accuracy between drugs that work on cancer patients and drugs that don't. Patients no longer have to undergo drug regimens that can lead to side-effects and complications. Mitra has made deals with a number of top hospitals in India and abroad to provide personalized treatment options.

4. Innovative Acer provides a healthcare data analysis platform that uses artificial intelligence. The platform is used in healthcare facilities to keep track of populations' health. The company has developed a cloud-based platform that collects, researches, and provides insight into patient health.

5. Fitness training is available at CureFit both in the gym and at home, under the umbrella of dance, yoga, and workouts. Food delivery services and an online mental wellness platform are available under the brand EatFit, which offers healthy meals, snacks and beverages.

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Table 2 Some startups in the Indian dairy industry (own representation).

Startup Name	Launch Year	Status	Acquired By
Milk Basket	2015	Active	Reliance
Doodhwala	2015	Closed in 2019	–
Daily Ninja	2015	Activea[3]	Big Basket
Supr Daily	2015	Active	Swiggy

6. HealthifyMe transforms a billion lives by promoting health and fitness! Healthy lifestyles are being created by this app, which changes how people stay fit, eat clean, and build healthy habits. Having over 20 million downloads, and a team of 800+ nutrition, fitness, and yoga coaches, HealthifyMe has made a major impact in South East Asia and is poised to expand globally. Artificial Intelligence, combined with Human Intelligence, produces a product that is changing lives. In addition to offering employee wellness solutions, HealthifyMe also offers B2B services to over 100 companies.

9 Are ankle-biters capable of attacking each other?

Ankle-biters are not only a threat to the existing businesses; they also pose a threat to their fellow ankle-biters. Our analysis will be based on the following startups in the Dairy Industry.

From the above table 2, we see that Milk Basket, Doodhwala, Daily Ninja, and Supr Daily launched their platforms in 2015. Out of the four startups mentioned, three business ventures have been acquired and are operating successfully: Milk Basket was acquired by Reliance Group (Baruah, 2021), Daily Ninja was acquired by Big Basket (The Economic Times, 2020), and Supr Daily was acquired by Swiggy (YourStory, 2021).

However, Doodhwala couldn't sustain its business despite disrupting the supply chain and market, reducing the value chain, and turning products into platforms. They failed for many reasons, such as operating on low margins, excessively using cashbacks and discounts, not being clear about their competitive advantage, and facing intense competition from giants. It wouldn't have been so hard for them to swim across the ocean if there had been only one reason for their failure. Doodhwala managed to eat the market share of other retailers selling milk for decades by initially entering the market as an ankle-biter.

However, other ankle-biters came up with an approach that included open innovation, market awareness, continuous competitor analysis, flexibility, and sustainability, plus an understanding of rapid changes in consumers' psychology.

10 Defensive strategies by incumbents against ankle-biters

Singh (2015) highlights that the health of an organization can be sustained over time, much like the health of humans. Organizational health is therefore a powerful lever in a dynamic business environment where dealing with change is an instinct linked to survival.

Startups, which used to be considered ankle-biters, are now not just competitors, but rapacious ones that operate in ways you're not allowed to, often at the edges of regulation. When did startups gain so much power? One of the main reasons is that they have more funding, more capital. Back then, startups were funded with five million dollars; they were ankle-biters. Technology-wise, they were probably a good acquisition, which is what they were hoping for as well. Their budget for research and development is much higher and they spend hundreds of billions of dollars on it (Steve, 2018).

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As a way to defend themselves from ankle-biters, incumbents need to come up with strong defensive moves:

1. **Investment in Startups:** Several incumbents have invested in the new entrants, such as Mahindra and Mahindra, which invested $2 million in a farm equipment rental startup, Gold Farm; and Bajaj Finance, which invested $35 million in mobile wallet maker Mobikwik. George Mitra, chief executive officer at Avendus Wealth Management, notes that business groups invest in start-ups to find out what the next big thing in space can be, as well as to be aware of the ground situation that can help them react accordingly. Investing in companies is primarily about finding out what are businesses that can either complement or disrupt existing ones to diversify the existing ones.

2. **Learn to Innovate:** The ankle-biters are driven by innovation. They look for transformative needs in the market, develop their products to meet those needs, and capture the customers of existing players. The entry of Patanjali in the Indian market as an ayurvedic brand completely disrupted the FMCG sector. In order to solve this problem, Hindustan Unilever Limited (HUL) revived their ayurvedic brand Lever Ayush, which has been successful and is second on the market after Patanjali.

3. **Instead of being first to market, always be first to scale:** While incumbents might lag behind in innovating, they can set the standard for large-scale productions. To capture the market space, large companies must rely on their existing infrastructure and abundance of resources to see what's disrupting the market and surge production more than startups.

In order to get a sense of how disruption is taking place in the real world, the authors will examine different industries and see how some of the new entrants are impacting the market.

11 Disruptions in Different Sectors

1. **Pharmaceutical Industry**

The pharmaceutical industry has seen a number of innovations despite the Covid-19 pandemic, long clinical trials, and years of research and development. State-owned companies perform better on innovation than privately owned companies when it comes to R&D investment. Though private-owned companies invest more in R&D, their innovation output is relatively slower as compared to government-supported firms that receive more government support (Xu, 2021).

The U.S. Food and Drug Administration granted Emergency Use Authorization (EUA) to Johnson & Johnson's single-dose Covid-19 vaccine candidate in 2021. Infected patients with Covid-19 have been treated with Gilead Sciences' broad-spectrum antiviral drug Remdesivir. Additionally, Sanofi, in collaboration with GlaxoSmithKline (GSK), is also developing a Covid-19 vaccine that includes the spike protein and adjuvants that belong to Sanofi and GSK. Moderna has been a pioneer in the development of mRNA-based medicines and is a leader in the field. The Pfizer-BioNTech pediatric Covid-19 was recommended by the US Center for Disease Control (CDC) for children 5-11 years old at the end of 2021 (Chattopadhyay, 2022).

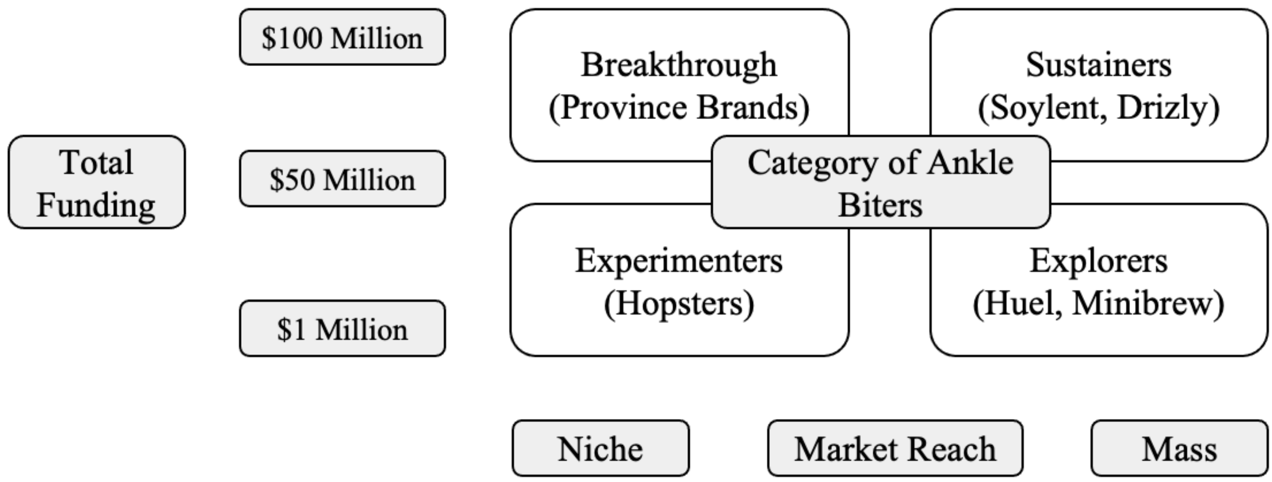

Figure 3 Classification of the examples of ankle-biters according to the matrix (own representation).

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The healthtech sector got a huge boost despite the Covid scare that hung over the industry. Health, wellness and healthcare analytics are among the top subsectors, but the most action this year was in online pharmacies. As a result of the pandemic, online pharmacies got a big boost which required respecting social distancing and other standards. During the tough times of Covid-19, they made access to medicines easier for the consumer. The surge in late-stage funding helped four startups become unicorns this year – Innovaccer, Pharmeasy, Curefit, and Pristyn Care (Jain, 2022).

2. **Beauty and Personal Care Industry**

The beauty industry has seen several innovations. It can relate to product development, inclusive beauty, evidence-based skin analysis, and incubations.

- **Product Development:** In 2018, Foreo, a Swedish brand that produces beauty devices, released an AI-enabled device, the Luna Fofo. The device monitors skin hydration levels by integrating machine learning and sensors and uses the data generated to customize customers' cleansing routines over time.
- **Inclusive Beauty:** The positioning of new brands like Hims, for example, involves catering to underserved and niche segments such as masculine beauty products. New brands like Hims are offering skincare, hair care, and supplement products for male wellness.
- **Evidence Based Skin Analysis:** Recently launched brands have used artificial intelligence to personalize skincare, such as Atolla, launched in August 2019. Atolla takes advantage of a multi-pronged tech approach to offer personalized serums. It uses AI, a monthly at-home skin test, and a mobile app to develop users' skin health profiles, which are updated based on results of the monthly test, inputs from users regarding season or lifestyle changes, and more.
- **Incubations:** Even incumbents have been innovating to keep up with the competition. Revlon's Flesh, L'Oreal's Seed Phytonutrients, and Unilever's Skinsei are examples of internally developed brands. The acquisition of Modiface by L'Oreal will be a major milestone for the industry, indicating that the future of beauty will be heavily tech-enabled. NYX, a brand owned by L'Oreal, launched a virtual beauty advisor platform last year for customers to test product samples.

3. **Beer Industry**

There has been a 0.3% decline in beer sales in the US in 2018 (according to Information Resources Inc.). This may be due to competition from competing products such as Hard Seltzer or an increase in consumer awareness of alcohol-free or lighter alcoholic drinks. To deal with these challenges, startups are disrupting the market with products such as cannabis-infused beverages, hangover cures, and wine subscription services.

Category Breakdown:

- **Alternative beers:** It includes non-traditional beers made by startups, such as Province Brand's non-alcoholic beer produced from marijuana, and JoyBrau's first non-alcoholic protein beer aimed at health conscious consumers.

- **At-home devices:** Startups such as PicoBrew and MiniBrew, for example, are making at-home brewing easier and more convenient with their home-brewing machines that make it possible for customers to brew small batches of beer.

- **Delivery Platforms:** Startups are also emerging for on-demand beer delivery services. For instance, Drizly, a US based startup, known as Amazon for Beer, allows customers to order beer from nearby retailers through a mobile app.

- **Experiences:** Some players have started offering their customers experiences as well as beers, such as Hopsters, which allows people to brew their own beer, and Ripples, which prints personalized messages on foamy drinks like beer.

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4. **Meatless Future**
With startups producing high-tech protein products, the meat market is undergoing disruption. Startups are not just competing with frozen meat, but are also creating alternatives. Soylent is a US-based startup that makes meat replacement products such as powders, drinks, edible bars, etc. Over $71 million has been raised from investors including Google Ventures, Andreessen Horowitz, and others. Another startup from the UK, Huel, provides meat replacement shakes, and has raised about $26 million from Highland Europe.

By providing meat replacement products, startups are on their way to chipping away at the market share of the traditional players in the meat industry like Tyson, National Beef, and others.

Startups are also producing plant-based burgers, which means they're increasing options for vegetarians and vegans, while using a meat-like taste to entice meat eaters to consume environmental-friendly protein. One of the most well-known startups in this area is Impossible Foods, which offers its meatless products to commercial markets and restaurants. The company has partnered with Burger King to produce the Burger King Impossible Whopper. (Mettler, 2020).

12 Conclusion and Implications for Business Strategy

As long as innovation exists in any industry, whether it's pharmaceutical, chemical, or health-tech, there will always be ankle-biters. It is likely that ankle-biters will persist and intensify in the years to come, and become a bigger problem in a competitive environment. Businesses need to accelerate innovation at an ever-increasing pace if they want to provide customers with the uniqueness and personalization they desire. The ability to deal with ankle-biters requires market awareness, open innovation, continuous competitor analysis, flexibility, and sustainability, plus a deep understanding of how consumers' psychology is changing rapidly. Among our most important recommendations for business professionals is that they should understand their current business model better, embrace the concept of ankle-biters, and ideally identify new and more flexible future business models.

In order to elaborate on more formal theoretical models, researchers should conduct further empirical studies exploring the definition of ankle-biters, its impact on other ankle-biters, traditional businesses, industries and enterprises. Here the researchers have tried to clarify what ankle-biters are and what strategies they use to become ankle-biters. A further intensive research study is needed to provide a better understanding of ankle-biters' formation, diffusion, and impact on organizations and ecosystems. In light of the fact that ankle-biters exist in every industry, including B2B, B2C and B2G, further research will contribute greatly to our understanding of 1. How new ankle-biters can disrupt markets and 2. What enterprises can do to remain competitive and flexible enough to avoid being eaten by ankle-biters.

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