



**REPORT
ON
ENTREPRENEURSHIP (UCW-249)**

**Submitted in Partial Fulfillment of
Course – COMPUTER SCIENCE AND
ENGINEERING(IOT)**

**At
CHANDIGARH UNIVERSITY, GHARUAN
BATCH (2019-2023)**

**Submitted By
NAME – Parikshit sharma
UID – 19BCS4520
CLASS – CSE-(IOT-1)**

TASK-3 Description-SWOT analysis on the chosen field

1. Knowledge about Field-

Facial recognition is a biometric software application capable of uniquely identifying or verifying a person by comparing and analysing patterns based on the person's facial contours. Facial recognition is mostly used for security purposes, though there is increasing interest in other areas of use. In fact, facial recognition technology has received significant attention as it has potential for a wide range of application related to law enforcement as well as other

enterprises. In Machine Learning ,a CNN(Convolutional Neural Network) is a class of deep, feed-forward ANN(Artificial Neural Network) that has been successfully been applied and analysing visual imaginary. They have applications in image recognition (facial recognition) and video analysis, recommender systems and natural language processing.

Here, **facial recognition** would be analysed.

2. Swot Analysis-

a) Strength-

Increase workplace productivity.

Rather than spending hours of manpower on menial, repeatable tasks, employees can configure artificial intelligence to manage it instead. Although we've already used machines on the production lines before, AI allows us to manage a multitude of tasks more efficiently than before.

This is beneficial for all companies. By having technology manage everyday tasks (rather than humans) companies save money. It lowers operations costs and even noncompliance fees.

Adopted into many industries.

AI is now used in a variety of industries, ranging from digital marketing to healthcare. The type and sophistication of the AI needed depend on the task — you'll need less power to automate emails than sorting through a registry of patient information, for example. It's not just for sorting information either; we're also seeing AI used in facial recognition and academic research too.

Better quality of life.

AI is used outside of the workplace as well. Within the home, people who have light bulbs and smart speakers are using AI too. These devices make managing the home easier and can reduce the cost of electricity. You can even find AI in your car, so long as you're buying a brand like Tesla.

In some ways, it's strange. Only a few years ago, artificial intelligence was found only in sci-fi books, games, and movies. Now it's commonplace, despite not reaching even its full capabilities yet.

b) Weaknesses

Artificial intelligence remains inhuman.

You know by now that artificial intelligence is a form of technology. It can be a machine or an algorithm. But of course, it's not human. And this last point remains a strength and a

weakness simultaneously. As a strength, it means people working in jobs requiring a touch of "humanity" feel safe — their job isn't up for grabs by our technological overlords quite yet. But as a weakness, this means AI is limited. It's a tool but not necessarily a solution. AI

can communicate, but it can't communicate emotionally. And so, although it can use information, it won't be able to grasp or react to the complexities of human emotion.

The chance to outsmart us.

Developers are always pushing to redefine the limits of AI. Right now, it's able to complete a task, learn, and retain information. But maybe, in the future, it'll get to the point of improving and redesigning without human input. It's this potential reality that makes people remember the robotic overthrowing in the movie I, Robot.

Governments are slow on the uptake.

Technological experts, like Elon Musk, have warned against artificial intelligence, believing that we need to be smart about how we use it. And how do we use it? This prompts the question of ethics. Is there a line for the ethical use of AI? Bills, regulations, and laws aren't keeping up with the rapid development of technology. Even Congress doesn't fully understand how the internet works, so what hope is there for the ethical use of AI?

c) Opportunities

Combining AI with newer forms of tech.

Artificial intelligence is connected to other new forms of technology, including machine learning, deep learning, and the Internet of Things (IOT). It'll likely be adopted into programming, enabling developers to reverse problem solve. This allows for enhanced responses to problems, which may benefit other industries, like customer service.

Smart cars drive progress for people with disabilities.

Right at this moment, we're seeing the adoption of AI into the automobile market. Tesla car models use it to self-drive on the highway and park without human assistance. Obviously, this is something straight out of a science fiction novel (aka cool as heck) but it's also beneficial for people who have disabilities and has impacted their driving ability.

Less strain on employees.

And as I said in the strengths section of this SWOT analysis, AI allows us to automate boring, trivial tasks. This is perfect for people who dread taking care of these tasks and would rather focus on the "big picture". Entrepreneurs or start-ups who have employees wearing a lot of hats and are stretched thin will love AI for this.

d) Threat

Job stealing

People believe the adoption of artificial intelligence will lead to job loss. And honestly, this is happening at a small scale. Think about those self-checkouts at Walmart. There's several of them and only one or two employees stepping in whenever a customer has a problem. No more humans working the cashier is a viable future for corporations. This is one example of AI taking over simple human tasks, but also taking away job opportunities. To combat this, the job market will need to evolve. Rather than being replaced, humans will need to work alongside AI. Whether this is a viable future is yet to be determined.

Will we lose control?

People wonder — will AI become so intelligent, humans can't control it any longer? This seems like a far off fear, but it may be closer than you think. IBM has a supercomputer named Watson, who appeared on and won more than \$5 million on the game show Jeopardy back 2011. Watson is hooked up to the cloud and uses machine learning and analytical software. It proved to be smarter than humans (at least in finding, using, and retaining information quickly) on the show eight years ago — and this is when artificial intelligence was “new”. Is it possible for Watson (or similar supercomputers) to eventually become sentient? It's too soon to tell, and this is the threat people feel.

3. Introduction as an entrepreneur

Boon of technology has changed the human civilization for good, as constant evolution in technology being intensively tracked and leveraged by new-age entrepreneurs, it only becomes imminent that aspects such as the Internet-of-Things (IOT), artificial Intelligence (AI), Machine Learning (ML), Deep Learning and more; are utilised by entrepreneurs to develop technology-driven models to actually solve societal problems. In this regard, with futuristic technology penetration being the focal point; Entrepreneur India lists the relevance of a domain called Machine Learning for entrepreneurs in 2018 to harness and develop solutions such that societal problems are mitigated whilst driving recognition for developing unconventional solutions.

a) Exciting Entrepreneurial prospects in Machine Learning

“Machine Learning has the potential to help create a utopian world without any disease, crime, and poverty,” states Yogesh Bhatt who is Vice President at Bengaluru-based

ManipalProlearn; a unit of Manipal Global Education Services. This is substantiated when we consider the fact that data scientists today have been working at the heart of societal issues in domains healthcare and medicine; which are undoubtedly in a definite need for disruption. Specifically, Machine Learning is now driving doctors through predictive analytics; towards aspects such as enhancing the success rates when it comes to diagnosing and treating life threatening ailments such as clinical depression and cancer. These aspects potentially provide exciting prospects for entrepreneurs, to come up with models driven by ML, as there practically (not theoretically) exists opportunity for impact to introduce positive

changes in the lives of people. “ML is well on its way to revolutionize cancer care by providing an analytical approach towards understanding cancer as a disease,” adds Bhatt.

b) Application of Machine learning in societal impact sectors – Data Science Entrepreneurs take note

For new entrepreneurs, the best societal impact to think of is healthcare in India which has continued to see dismal trends with respect to reachability to people and even actual

diagnosis and treatment of ailments. “Healthcare provides the right setting for big data analytics with enormous patient data in the form of diagnostic reports, radiological images, clinical observations, and so on,” informs Bhatt. For data crunching,

entrepreneurs could integrate data across different platforms to improve ML’s predictive abilities. In this scenario, Artificial Intelligence (AI) aspects would emerge as the nervous system of the healthcare industry to enable doctors globally to collaborate and develop effective techniques for treatment. This means that the healthcare industry in India could potentially oversee models helping in early diagnosis of ailments, along with serving as virtual nursing assistants, and even in robot-assisted surgeries.

c) Setting newer trends in precision medicine

“Machine Learning is the central cog in precision medicine, which suggests the alternate paths for a therapy,” iterates Bhatt. With the enormous amount of data at their disposal, data science entrepreneurs could also leverage ML in predicting epidemic outbreaks; by learning these patterns. Now, imagine this scenario in a country like India; where almost every year there is a new virus causing an epidemic (the most recent being the Nipah).

d) Making other sectors smarter through ML-driven entrepreneurial model

Apart from healthcare, sectors such as automobiles and even smart homes also form the next layer with respect to facing potential disruption. In automobiles, ML entrepreneurial models have resulted in the advent of self-driving cars. This is an area which is currently being

explored by data scientists in India; but facing hurdles with respect to the infrastructure and road conditions. Hence, your entrepreneurial aspirations could be put to test here. “By

fortifying the security factor with a capability of identifying objects in a fraction of second, the future homes and neighborhoods will be much safer places” adds Bhatt.

e) Demystifying entrepreneurial challenges

However, with the Indian context facing a multitude of challenges, with respect to training and nurturing the data-driven talent, Bhatt states that (as per a Manipal Global Education survey) that data scientists positions are amongst the hardest to fill within organizations.

However, there is good news; in the form of corporate acceleration programs which are now on the rise and aimed at according a fillip to data-driven entrepreneurship. A notable trend

amongst these accelerators has been a special focus on healthcare.

4. Summary

But my purpose here is to write about a subfield of Artificial Intelligence (AI) that is

Machine Learning (ML). ML gives computers the ability to learn without being explicitly programmed, when you “code” known behaviours. The focus is on developing algorithms that can automatically learn when exposed to data, identifying patterns and transforming data into knowledge. This really is the evolution of regular algorithms when computer programs became “smarter”. If you watched Matrix’s movie should remember the scene when the Trinity character must pilot a helicopter and her brain is exposed to an absurd amount of data (big data), to learn how to pilot that helicopter. That is it! Her brain receives data about helicopter’s behaviour, mechanical skills, technical problems and how to solve them. Besides the AI is ready to transform our industry and technologies, such as electricity did in the middle of the 20th century, also have the potential to change art, music, products and services. Today we interact with various products and services (computer programs) that have Machine Learning on its core, as Siri (Apple), recommendation from Amazon, Google Translate, Google Photos, Google Now, Cortana (Microsoft), Prisma (photo APP) or Facebook to recognize your friends in pictures as well as ordering your timeline based on your relationship with the content (likes, comments, etc.), ie, when exposed to more fresh data ML will get better and better, creating new behaviours.

TASK 4 - Business Idea and Value Proposition with Customer Segments and Channel + Selling Plan

Description- Student has to give the details of Unique Business Idea, Customer Segments and Plan for promotion + Selling

1. Unique Business Idea

Idea is to use machine learning algorithms to identify any face and any man made things to judge what it is. The first generation of AI created machine learning systems. Machine learning focuses on the development of computer programs that can change, or learn, when exposed to new data. Algorithms from the first generation of AI ‘taught’ machines to identify images and objects, see obstructions, correlate, and discover relationships between variables. It resulted in intelligent applications that managed single tasks at a time.

AI makes industrial machinery accurate, reliable, and self-healing; and paves the way for calibrated performance resembling human action. Modeling techniques locate indecisive voters, identify crops that are most suitable for a specific topography, and verify clinical diagnosis and treatment. AI integrates with robotic controls, vision-based sensing, and geospatial systems to automate advanced systems. It enhances disease prevention and treatment, boosts engineering systems, and drives self-organizing supply chains.

2. Value Proposition + Customers

a) **Customer Segment** - subgroup of customers in the market with similar problems, who together:

1. have needs which justify a distinct offer
2. And/or are reached through different channels

3. And/or require different relationships
 4. And/or have different profitabilities
- And/or are willing to pay for different aspects of the offer
5. Types of Customer Segments-

1. **Mass Market**- one large group with similar needs (consumer electronics: Blockbuster)
2. **Niche Market** - specialized group (wholesalers targeting retail: car part manufacturers)
3. **Segmented** - distinguished population with slightly different needs/problems (banks: middle-class and upper-class)
4. **Diversified** - two unrelated groups of people (Amazon retail & cloud computing)
5. **Multi-sided Platforms** - two or more interdependent groups (credit card companies' merchants & buyers)

Total Available Market - the population (of consumers, businesses, schools, NGOs, etc) that may be interested in your product/service/concept

1. How big it is?
2. What characteristics (demographic, socioeconomic) does it have?

Total Addressable Market - specific group of customers/users *you* (your venture) will reach

1. **"Top-Down" Estimate** - big-picture goal of what share of the total market you will get (usually in fraction of money transferred)
2. **"Bottom-Up" Estimate** - fact-based estimate considering the capabilities of your venture. "How many can I produce and sell in a week/year?"

b) Value Proposition - what value does it create for the buyer?

1. Why should people chose to buy this?
2. Which customer problem are you helping to solve?
3. What customer needs are you addressing?
4. What value are you delivering?

Methods of Value Addition

1. Design - uniqueness (Apple products)
2. Cost Reduction (better economic sustainability for buyer)
3. Convenience/Usability
4. Risk Reduction
5. Brand/Status
6. Accessibility
7. Newness

2. Promotion Plan

a) Research

“Research and analyse your product, your market and your objective expertise,” William Pirraglia, a now-retired senior financial and management executive, has written. “Consider spending twice as much time researching, evaluating and thinking as you spend actually writing the business plan.

“To write the perfect plan, you must know your company, your product, your competition and the market intimately.”

In other words, it’s your responsibility to know everything you can about your business and the industry that you’re entering. Read everything you can about your industry and talk to your audience.

b) Determine the purpose of your plan.

A business plan, as defined by Entrepreneur, is a “written document describing the nature of the business, the sales and marketing strategy, and the financial background, and containing a projected profit and loss statement.” However, your business plan can serve several different purposes. As Entrepreneur notes, it’s “also a road map that provides directions so a business can plan its future and helps it avoid bumps in the road.” That’s important to keep in mind if you’re self-funding or bootstrapping your business. But, if you want to attract investors, your plan will have a different purpose and you’ll have to write a plan that targets them so it will have to be as clear and concise as possible. When you define your plan, make sure you have defined these goals personally as well.

c) Create a company profile.

Your company profile includes the history of your organization, what products or services you offer, your target market and audience, your resources, how you’re going to solve a problem and what makes your business unique. When I crafted my company profile, I put this on our about page. Company profiles are often found on the company’s official website and are used to attract possible customers and talent. However, your profile can be used to describe your company in your business plan. It’s not only an essential component of your business plan; it’s also one of the first written parts of the plan.

Having your profile in place makes this step a whole lot easier to compose.

d) Document all aspects of your business.

Investors want to make sure that your business is going to make them money. Because of this expectation, investors want to know everything about your business. To help with this process, document everything from your expenses, cash flow and industry projections. Also, don’t forget seemingly minor details like your location strategy and licensing agreements.

e) Have a strategic marketing plan in place.

A great business plan will always include a strategic and aggressive marketing plan. This typically includes achieving marketing objectives such as:

- Introducing new products
- Extending or regaining market for existing products
- Entering new territories for the company
- Boosting sales in a particular product, market or price range. Where will this business come from? Be specific.
- Cross-selling (or bundling) one product with another
- Entering into long-term contracts with desirable clients
- Raising prices without cutting into sales figures

- Refining a product
- Having a content marketing strategy
- Enhancing manufacturing/product delivery

“Each marketing objective should have several goals (subsets of objectives) and tactics for achieving those goals,” states Entrepreneur

“In the objectives section of your marketing plan, you focus on the ‘what’ and the ‘why’ of the marketing tasks for the year ahead. In the implementation section, you focus on the practical, sweat-and-calluses areas of who, where, when and how. This is life in the marketing trenches.”

Of course, achieving marketing objectives will have costs. “Your marketing plan needs to have a section in which you allocate budgets for each activity planned,” *Entrepreneur* says. It would be beneficial for you to create separate budgets for internal hours (staff time) and external costs (out-of-pocket expenses).

e) Make it adaptable based on your audience.

“The potential readers of a business plan are a varied bunch, ranging from bankers and venture capitalists to employees,” states Entrepreneur. “Although this is a diverse group, it is a finite one. And each type of reader does have certain typical interests. If you know these interests up-front, you can be sure to take them into account when preparing a plan for that particular audience.”

For example, bankers will be more interested in balance sheets and cash-flow statements, while venture capitalists will be looking at the basic business concept and your management team. The manager on your team, however, will be using the plan to “remind themselves of objectives.”

Because of this, make sure that your plan can be modified depending on the audience reading your plan. However, keep these alterations limited from one plan to another. This means that when sharing financial projections, you should keep that data the same across the board.

f) Explain why you care.

Whether you’re sharing your plan with an investor, customer or team member, your plan needs to show that you’re passionate and dedicated, and you actually care about your business and the plan. You could discuss the mistakes that you’ve learned, list the problems that you’re hoping to solve, describe your values, and establish what makes you stand out from the competition. When I started my payments company, I set out to conquer the world. I wanted to change the way payments were made and make it easier for anyone, anywhere in the world to pay anyone with few to no fees. I explained why I wanted to build this. My passion shows through everything I do.

3. Selling Plan

a) Build a sales strategy with a wealth advisor.

Advisors who specialize in this area can help you maximize the financial and emotional value of the business. Specialists can help you define a strategy in alignment with your family’s goals and objectives. Plus, a well-chosen advisor can help you assemble the right team to sell your business. An unbiased advisor can guide you throughout the process, from interviewing investment bankers to bringing together all the legal, tax and business experts.

b) Create a tax plan.

Selling a business can have a huge impact on your taxes. If the gain on the sale is long term, a federal tax rate of as much as 23.8 percent could be applied. Additional state income taxes, where applicable, may also be imposed on the gain. Doing tax planning before selling might help in maximizing deductions and avoiding penalties.

Work with a tax advisor before completing the sale to establish your income expectations for the year, calculate anticipated taxes based on projected gains and determine if any estimated tax payments are required along as well as year-end payments.

Remember that the value received from your business will also be included in your estate after your death. Federal estate tax rates of as much as 40 percent may apply. Some states collect additional estate or inheritance taxes.

c) Consider selling the firm over time.

To offset the tax impact, consider selling the business on an instalment basis. This involves collecting payments over several years, allowing you to recognize gains over time and potentially avoid higher tax brackets. This is most effective if you are confident the buyer will be able to meet his or her future payment obligations.

d) Clean up the financials.

Before talking to buyers, eliminate financial items not directly related to operating expenses. This can include insurance or salaries for nonworking family members, as well as cars, expense accounts and other discretionary expenses. If it's not something the buyer would want to pay for, it shouldn't be there.

e) Review the financials with an accountant.

You can conduct one of the following financial reviews with an accountant:

A compilation, the least formal type of assessment, involves a certified public accountant's preparing financial statements based on information provided by the business owner. The CPA won't offer any opinions on the data and will assume everything is accurate. A compilation is useful for evaluating internal goals but doesn't provide the validation a buyer will want.

A review involves a more in-depth analysis of the financial statements. The CPA provides an opinion of the company's financial status and identifies potential issues. The review provides "limited assurance" that nothing serious came to the accountant's attention.

The most formal assessment is an audit, when a CPA conducts a critical review of the company's management and an independent verification of financial information. An audit provides the highest level of assurance that the financials are in line with generally accepted accounting practices. This might be the best option for owners preparing to sell a business.

f) Diversify your customer base.

As part of the business-review process, examine all your vendor contracts, customer contracts, license agreements, buy and sell agreements and other arrangements that might affect a sale.

You want to know if any of your current business terms will hurt or increase value for the buyer. Look for red flags, such as a significant portion of sales going to one or two customers. This could be considered risky for a buyer, especially if the customers have strong personal relationships with the owner.

g) Mine Your Own Data

Obviously, data-driven decisions have been defining the success of retailers long before AI and ML were even invented. Choosing the right mix of products based on customer demand, setting prices and offering discounts based on competitor policies—those things have always been about careful data analysis.

But the crucial factor to thrive in our "be quick or be dead" time is the speed at which you make decisions, as well as their quality. Businesses should not only look back, analysing the

data obtained in the past. Cutting edge data processing happens in real-time and changes are being made on the fly.

Adaptive analytics, for instance, prevent customers from abandoning your website by sensing the first signs they might drop off and causing live chat assistance windows to pop-up. They are also good at upselling, showing customers the most relevant products based on their behaviour at that moment. As in many other cases, it's not the size of your data that matters, but the way you use it—"small data" improves your marketing ROI greatly.

h) The Power of Personalisation

Last year was hard on a number of American clothing retailers. True Religion was listed among those facing considerable risk of failure in 2016. This denim brand, however, didn't go quietly into the night. In order to boost sales, the company's marketers decided to harness the power of artificial intelligence. True Religion is now seeking a new, highly personalised approach to its customers with the help of Einstein, an AI tool from Salesforce. One hundred and forty-five brands that used Einstein-powered tools in the beta-period saw 7—16% revenue growth per visitor. This story is as old as the world. Its moral is quite Darwinian: One has to evolve in order to survive. And the latest evolutionary adaptation of retailers is the ultimate personalisation.

So, how exactly does AI help retailers improve their services in this regard? A good example of the AI-powered personalised approach to customers can be found once you get in the Jackets and Vests section of the North Face website. Just click on "Shop with IBM

Watson" and enjoy an experience that's almost akin to a human sales associate helping you choose which jacket you need. The AI will ask where, when, and for what kind of activities you are going to use that jacket. It will then specify what styles, materials, and colours you prefer, and after a string of clarifying questions, you'll get a jacket that perfectly matches both your aesthetic perceptions and practical needs.

Not only does this approach empower retailers with easily scalable personalisation tools, but it also helps the customer overcome the curse of our times: being overwhelmed by too many choices and information. Yes, more goods lead to more possibilities. But this, in turn, may lead to more confusion when a customer faces an endless grid of products on the website to choose from. Or—the other way around—to more satisfaction when a customer gets a friendly assistance that reduces his or her cognitive load by an order of magnitude.

i) Use the Momentum

Needless to say that all the above-mentioned techniques should be used wisely. Machine learning recommendations, iteratively feeding on data produced by the ML algorithm itself, could go too far from what a customer really wants and create an effect that might resemble Facebook's echo chamber. Therefore we need to carefully supervise and constantly tweak these intelligent machines instead of being awestruck by their superhuman power.

The technology, after all, is not a monument but a momentum, and we need to use this momentum to our advantage. Combining artificial intelligence, machine learning, virtual reality, apps like coupon aggregators and deal finders with real human expertise will benefit both retailer and customer, making the world a better place to buy and sell.

Plagiarism Checker:

RESULTS



Completed. 10096 Checked



Plagiarism

Unique

RESULTS



Completed. 100% Checked



Plagiarism



Unique

RESULTS



Completed: 1009b Checked



Plagiarism



Unique

RESULTS



Completed: 1Q096 Checked



Plagiarism

Unique

RESULTS



Completed. IQQ96Checked



Plagiarism



Unique