

# DotsLogistics | The Swift Bunnies

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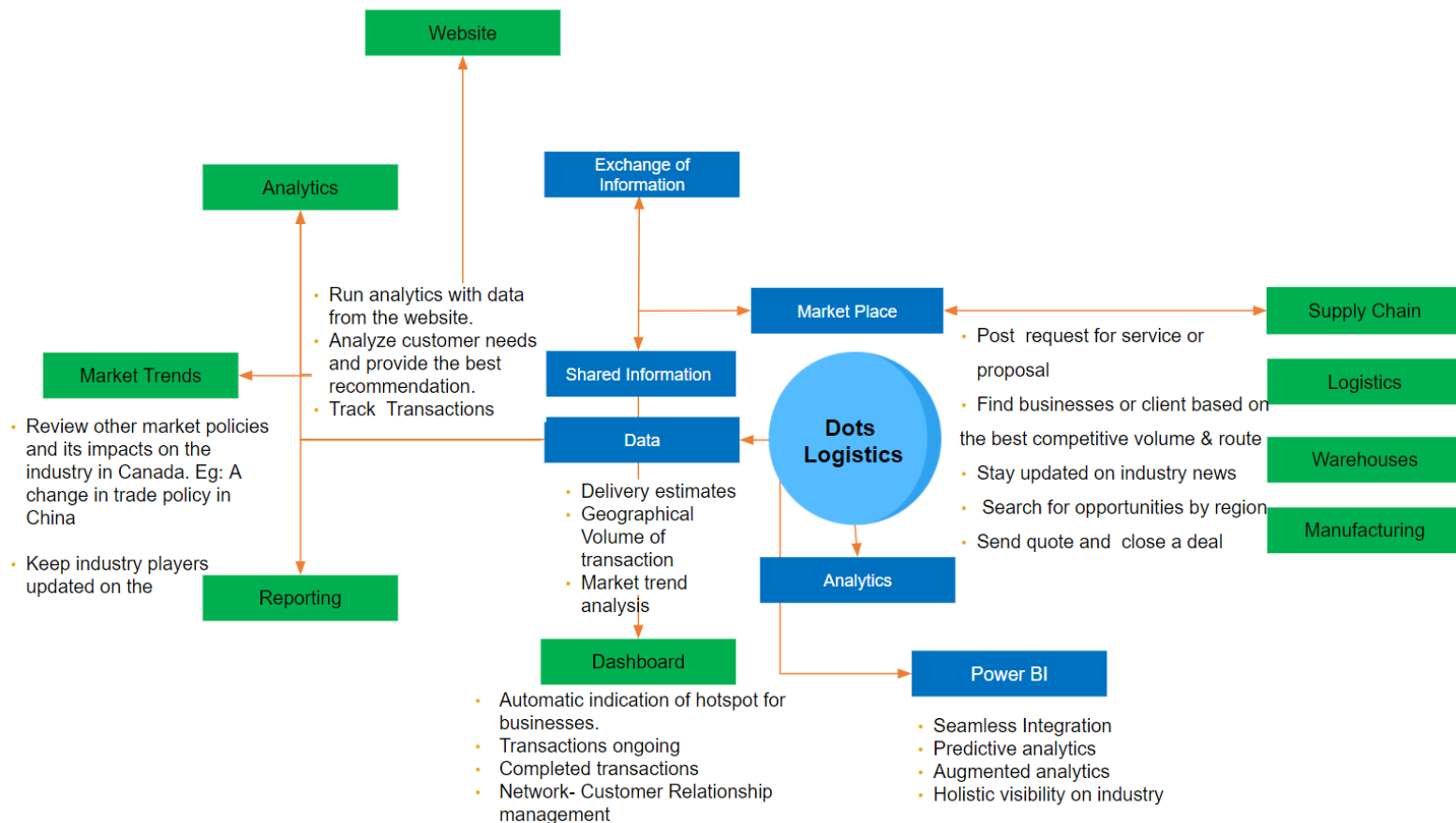
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## A1. Solution Architecture Diagram

Our solution will provide an open-source platform with AI capabilities that connects warehouses, logistics companies, and small businesses to find partners and complete transactions. The product will provide comprehensive analytics to companies, helping them find business partners in the sector based on preference and competitive advantage. Our platform would be tailored towards supporting Business to Business and Business to customer relationships for small businesses.

### Re-Imagine Supply Chain Industry by empowering SME with information How DotsLogistics will work seamlessly with industry players



#### Benefits of our Platform:

- Comprehensive supply-chain management
- Up-to-date information on Logistics and storage across all regions
- Up-to-date and direct exchange of information with players in the industry.
- Immediate response to market changes by keeping businesses informed
- Optimization for small- to medium-scale businesses in the supply chain industry.

## A2 Pricing Justification

### Bronze Members - Free Account

Since we are aiming to provide software solutions for SMEs who cannot afford expensive ERP software, we would like to provide an inexpensive solution. Through the use of our free marketplace, SMEs can have access to potential partners at no cost, where we only ask for a **3% commission from all transactions**. However, if a shipper or provider offers a promotion on our software, we request an additional commission of **10% of the total discount** offered on the site. For instance, if a business on our platform takes a promotion that decreases their costs by \$10000, we request a \$100 commission. This way, we keep the marketplace free for customers while gaining revenue.

Assuming that we have 0 transactions with promotions and get all revenue from the subscriptions and 3% from transactions. Using the following in

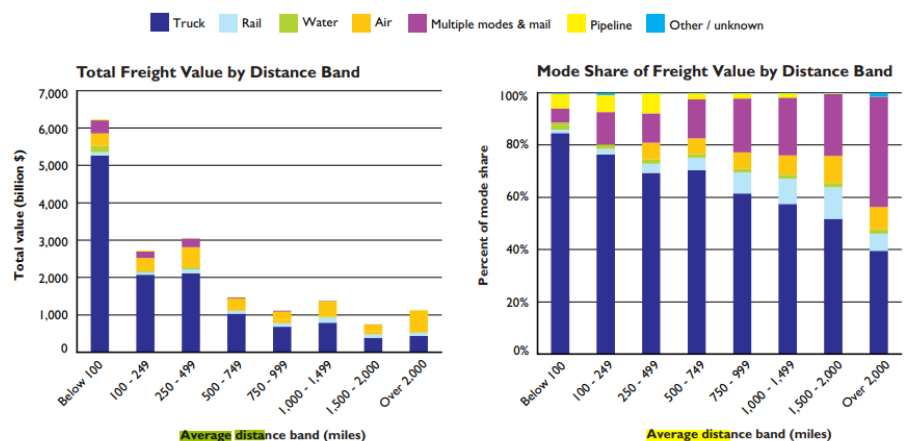
- Shippers flatbed rates are averaging \$2.68USD per mile in March 2021 [21]
- Load-to-truck ratios are at 73.88 in the US in March 2021 [21]
- Freight distances in the US are shown in the image to the right [22]

Using the graphs viewed to the right and assuming that usage of our location filters on the marketplace is successful, the average mileage we are assuming is 100 miles. Using the flat rate, we are assuming a cost of around \$286USD = \$360 CAD for each transaction. Taking our profit of 3% is around \$10 for each transaction.

We take total monthly fixed costs of around \$3000 for development and site maintenance (assuming our current status with 4 team members and Azure credits). Further, no variable costs for each transaction. Thus, break-even analysis can be conducted using

$\text{Total fixed costs} / \text{unit price} - \text{unit variable costs}$ . This leads to the tentative number of transactions needed to be 300 per month. From our market research and interview information on user needs, it is reasonable to expect 300 transactions given that the marketplace is free and accompanied by effective marketing.

Moreover, some customers will not have incentive to pay for continuous usage of the platform as they do not have a consistent need for partners or market insights. We call these clients “one-time” customers where they are predicted to seek promotions. Therefore, for these promotions and discounts offered on our platform, we would like to take 10% of the discount on the transaction. This allows both



one-time customers to receive a discount and for us to gain profit. Such promotions and discounts would be established via partnerships with businesses. This also encourages these one-time users to come back to our platform the next time they need a similar service as they recall the promotion received their first time.

## Silver Membership

To benefit small businesses, we would like to scale down approximately 10% lower than what other larger companies are offering. Pricing for streamlining supply chain management through ERP software was investigated, where some competitors pricing are listed below:

- Oracle SCM pricing: \$300-500/month [19]
  - collection of supply chain management applications that are flexible, secure, innovative, and fast to address the needs of the current market environment
- SAP SCM: Pricing for Enterprise User: Starting at \$199 per user, per month (minimum 10 users) [23]
- Uber Freight: charges by the type of accessorial per transactions (see image on the right) [20]

Accessorial <sup>1</sup>	Carrier payment
Detention <sup>2</sup>	\$75 per hour
Layover	\$300 per day
Truck order not used <sup>3</sup>	\$200 + \$2 per mile deadhead
Driver assist	\$75 per load

Taking a competition-based pricing strategy where we offer services cheaper than our competitors allows us to maintain a sustainable competitive advantage in the small business space as our product is affordable and less expensive.

Accounting for the costs of using Azure for Web Services and AI, we are aiming for a profit margin of 20%. Thus, a monthly price of \$57.99 was determined, applying the 9-digit effect.

## Gold Membership

In Canada, the cost of a marketing consultant is around \$75 – \$150 per hour [24]. Such prices depend on the specialization of the company, location, and years of experience [24]. As DotsLogistics is new to the market, we will start at the base amount of \$75/hour of our services. Using the 9-digit effect, the baseline cost will be \$74.99.

To encourage customers to spend more on increased hours of consulting, we are adding additional promotions where they purchase a specific amount of hours. The more hours purchased, the greater the discount, with the maximum purchase of 20h at a 20% discount (where the hourly rate becomes \$59.99).

Plan	Hours	Total Cost	Hourly Rate	Discount %
<i>Hourly</i>	Pay as you go		\$74.99	0
<i>Premium 1</i>	4 h	\$284.99	\$70.99	~ 5%
<i>Premium 2</i>	10 h	\$649.99	\$64.99	~13%

Premium 3	20 h	\$1199.99	\$59.99	20%
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### A3. Findings from field research

We interviewed 3 different individuals involved within the industry.

#### 2.1 Participant 1: Ms Carla Kingston

<https://www.linkedin.com/in/carla-kingston-floyd-mba-a400122a/>

An entrepreneur who owns a small logistics company (Cornwall, Ontario)

#### How has COVID impacted your business?

Since the arrival of Covid, I have seen a reduction in business of just under 30%. I have installed inverters in the trucks to allow them to operate a microwave, toaster and kettle to keep the drivers out of restaurants and safer. All trucks have always had fridges so they now bring most meals with them. I have also supplied marks, anti-bacterial wipes and a clean-up station for the trucks.

#### Where do you find customers?

How do you find business? (marketing) I have many contacts in the industry as I have worked in it for over 25 years, but if I am in a new area where I don't have any customers, I will call other trucking companies and offer a 3PL service or use a load broker.

#### What systems/software do you have in place for logistics and business management, and what do you like/dislike about them?

As stated, I am small enough to use excel for tracking the trucks and loads. Because I operate a specialty company (Ultra low step deck services) I don't have to worry about tracking trailers as we don't offer drop & hook services. I have looked into purchasing software and have decided that McLeod software isn't viable as it doesn't allow for easy deadhead moves so I would probably go with Axon if I decide to expand the number of trucks. I have hired a CPA to do all of my accounting services, but I do my own payroll, WSIB and all remittances myself. However, more analytics would be helpful.

#### How do you maintain relationships with partners?

In the supply chain (supply, customer, warehouse), I don't work with warehouses as it isn't my business model to offer drop and hook services. I stay in contact mainly through emails but also send Christmas cards and gift cards during the holidays to thank others for their services.

#### How do you find business partners?

Most contacts I have worked with for over 25 years or I reach out to load brokers or freight forwarders.

#### What analytics would you like to see that you don't have in your current system?

What analytics or report capabilities do you have? I believe I have all of the analytics that I currently need. I know my revenue per mile, cost per mile, fuel per mile, maintenance per mile, deadhead miles and utilization rates.

**What is the average volume of transactions you transact on a monthly basis?**

It really varies if I do a lot of LTL freight, I have more transactions than doing full truck load and how far I travel. For example, I have a truck currently going from Newfoundland to Louisiana and then he will head to Texas to pick up a load for Dartmouth Nova Scotia so that truck will only do 2 transactions over almost 3 weeks.

**What has helped your business grow?**

What opportunities have you leveraged? Good customer service, speciality equipment, excellent drivers, on-time delivery and no damages are all reasons customers like our services.

**What are the common needs/characteristics/values of your customers and how do you accommodate these?** Same as above.**2.2 Participant 2: Bibhu Mohapatra**

<https://www.linkedin.com/in/mohapatrabibhu/>

A manager from a manufacturing firm (Toronto, Ontario)

**How has COVID impacted your business?**

- Retail didn't end up doing well, had to shut down
- E-commerce did well
- Raw materials from china were delayed
- Spoke to suppliers to ensure there was enough stuff
- Vancouver Port : exports/imports, delays, closures, impacted supply chain

**What systems/software do you have in place for logistics and business management, and what do you like/dislike about them?**

- Warehouse management: [inflow](#)
- Inventory management
- Google analytics → to find what's trending, what people are looking for, ties down to age, region, etc.

**How do you maintain relationships with partners in the supply chain (suppliers, customers, warehouses, etc)?**

- Regular meetings, reviews, look for new businesses, excel driven

**How/where do you find business partners?**

- Referrals important for finding partners

**What analytics would you like to see that you don't have in your current system? What analytics or report capabilities do you have?**

- Consumption rates → how much to source
- Historical data, make predictions for the future
- Insight into holistic industry overview → holistic impact
- What's happening across industry (delay in delivery, news of what's happening across industry/country, impact on prices)

**What is the average volume of transactions you transact on a monthly basis?**

- 400-500 transactions (invoices, etc.)
- Everyday thousands w/ logistics partners → individual goods going out

**What has helped your business grow? What opportunities have you leveraged?**

- Lots of marketing, social media, look at whats trending
- Looking at customer demographic, their needs, customer targeting
- What philosophies are trending

**What are the common needs/characteristics/values of your customers and how do you accommodate these?**

- Supplies are planned ahead in advance, online search for suppliers or existing suppliers
- Care for employees, promotional materials, interact w/ HR to understand what they need, not just end customer, but what the employee needs

**2.3 Participant 3: Ms. Karen Plumley**

<https://www.linkedin.com/in/karen-plumley-00570937/>

A National Director for Sea Freight Systems from an International Transport and Logistics company (Toronto, Ontario)

- **How has COVID impacted your business?**
  - Significantly, from employees working from home to mass disruptions in the supply chain. Vessel and port congestion. At this point the fluidity of international ocean shipments is well below 2019. Getting space on vessels is challenging and when you do get space the price is 3-4 times higher or more compared to 2019.
- **Where do you find customers? How do you find business? (marketing)**
  - We have a dedicated market research team who looks at Canadian Importer and Exporters. There are many methods and used to find our customers. We have a strategic approach where we have dedicated business development based on commodity.



- **What systems/software do you have in place for logistics and business management, and what do you like/dislike about them?**
  - We have our own inhouse systems which we designed. We are converted from AS400 to Java based systems and web based systems.
- **How do you maintain relationships with partners? In the supply chain (supply, customer, warehouse),**
  - Frequent communication. We have our organizational structure based on the relationships with all our partners.
- **How do you find business partners?**
  - They come to us or we do our own research to find high quality suppliers. International carriers we don't have a large selection but trucking companies we do. We have a high standard of requirements from the carriers that they need to comply with.
- **What analytics would you like to see that you don't have in your current system? What analytics or report capabilities do you have?**
  - All data is useful as you need it at different circumstances. We have access to most of our data, where we struggle is the quality of the data.
- **What is the average volume of transactions you transact on a monthly basis?**
  - Financial or volume? Volume our Canadian Sea Logistics industry moves over 9000 containers a month. You can see detailed information from our website.
- **What has helped your business grow? What opportunities have you leveraged?**
  - Opportunities due to the pandemic have been overwhelming. With the lack of space on vessels, customers are coming to us for assistance in getting space. Global trade and the increase in international business over the years.
- **What are the common needs/characteristics/values of your customers and how do you accommodate these?**
  - Timely/Quality information, customer service that can provide the needs of our customers.

## A4 Competitor Research

### 3.1 SAP

<https://www.sap.com/canada/products/supply-chain-management/supply-chain-logistics.html?btp=81b14d8f-8c58-40aa-a7af-cb2e24a41271>

- Market leader in enterprise software
- Helps companies of all sizes and industries operate efficiently and profitably, adapt, etc.
- 77% of world transaction revenue involves SAP system
- They use ML, IoT, and analytics tech
- Supply Chain Logistics Products
  - Real-time insights
  - Automate warehouse management - inbound and outbound processes
  - Optimize global transportation management - deliveries, freight costs
  - Collaboration through open logistics network - manage 3rd parties
  - Simplify yard operations and management - visibility and control

### 3.2 Oracle

<https://www.oracle.com/ca-en/scm/>

- Fusion Cloud SCM connects supply network w/ cloud business apps
- Complete picture of company finances and operations
- Helps users stay up to date w/ innovation to adapt to changing conditions through predictions and recommendations when making decisions
- Manage costs
- Social, mobile, remote access

### 3.3 Opentext

<https://businessnetwork.opentext.com/supply-chain-optimization/>

- Trying to address issue of production stoppages and shortages through optimizing supply chains to maintain transactions between business partners
- Helps companies build flexible sc ecosystems - agile, responsive, adaptable to customer + market demands
- Trading Grid - SaaS solutions, multi-tenant service

### 3.4 Comparison

<https://www.selecthub.com/enterprise-resource-planning/oracle-erp-vs-sap-erp/#:~:text=Both%20Oracle%20and%20SAP%20have,and%20weaknesses%20in%20different%20areas.&text=You%20can%20plan%20campaigns%20and,SAP%20excels%20in%20this%20field.>

- SAP - 'procure to pay' module helps companies manage purchases and enforce vendor choices while looking at procurement patterns to drive decisions; 'order to cash' helps manage quotes and contracts; better event management for insight and visibility into sc
- Oracle - 'supplier invoice to payment' process for vendor relationships make easy for company to make necessary purchases; tools providing transparency for tracking; better APS to track costs and allocate resources

### 3.5 Competitor Cons

Product features we could surpass competitors on.

#### Cons of SAP

- **Complexity:** The ERP is still very complex to use.
- **Human Resources:** SAP ERP integration requires a dedicated team with the capabilities to address glitches associated with the process.
- [Seidor, 2021]

#### Cons of Oracle

- **The maintenance costs** associated with Oracle are higher than the industry average, making this solution unaffordable for small companies. [Efficiency Leaders, 2020]

**-Customization :** Some of the default modules are not what a particular company needs, and this forces those companies to develop their own customized modules.

- ERP services are expensive, businesses can expect to pay between \$75,000 and \$750,000 for implementation. Costs for large businesses range from \$1 million to \$10 million. [[How Much Does an ERP Implementation Cost? \(cfbs-us.com\)](https://cfbs-us.com/blog/erp-implementation-cost/)]

## A5 Additional SME Research

Small-medium sized businesses contribute to 90% of Canadian economy [Gov Canada, 2010]

#### Weaknesses:

- IT resource constraints
- Data silo
- Inefficient operations due to lack of automation
- Too much data and lack of insight
- High operating costs
- Struggle to adapt to changes in the industry
- Can't afford expensive predictive analytics softwares
- Disrupted supply chains (big companies get “preferential treatment”) - reducing revenue, inflating costs, cutting into market share, causing issues with production
- Over-reliance on only a few suppliers - our platform will help them find suppliers

References: [10], [6], [11]