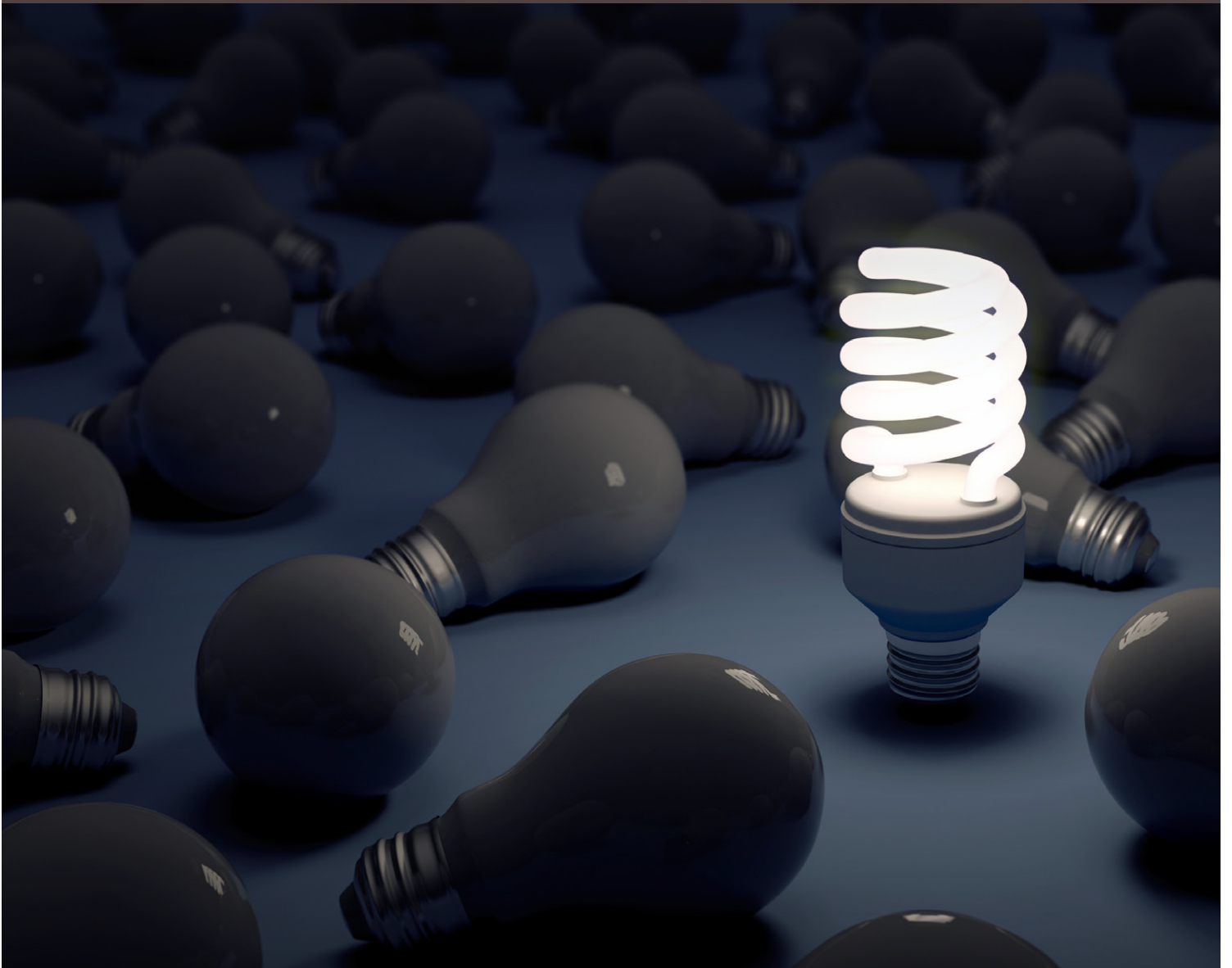


An Eventchain Case Study

Engineering Epiphanies



Engineering Epiphanies

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Engineering Epiphanies

Let's role-play. You'll be a 3PL or a Systems Integrator who designs and implements new operations for customers. We'll be Eventchain.

Scratch that. You'll be a 3PL and we'll be your therapist. Lie down on the sofa and tell us your story. Tell us where it hurts.

Where to start? The conversion process is long and expensive, and what Business Development promises the customer doesn't always line up with the expectations and capacities of Finance and Operations.

Ahhhh, the silos. They're very real. And they prevent us from working together cohesively and effectively. We end up defending our functions rather than developing a nimble business.

And then there's change. Change is hard on our people and consequently hard to manage - but change is what we do.

Change is our business. We design and implement new operations...and 'new' is just another word for 'change'. Every time we take on a new customer, we're changing things up. That's our job.

So...we need to be able to facilitate change within our own organization to serve our customer. We need to be able to project and predict the impact of those changes on our organization. We need to be able to implement new operations rapidly and effectively so as to retain the confidence of our new account and achieve KPIs and associated bonuses.

And all of those things depend on effectively predicting and managing changes.

And change is hard. And complicated. And it seems like managers and employees in different areas of the company don't see things the same way.

We're battling ourselves, change, our own mentalities and processes while trying to get the job done for our customer.

You know the phrases 'herding kittens' and 'putting out fires'?

That. That's it. That's what our day-to-day operation looks like, and it hinders our strategy and our performance.

Oh, my friend, we feel your pain. Your pain is universal. It is The Business Condition.

The Business Condition is an extension of The Human Condition.

Change is a given, and change is hard, and humans like their habits and resist change. And change is a given. And 'round and 'round we go. It is like resisting oxygen when we need to breathe. It is counter-intuitive, but it is what we do.

Businesses everywhere face this kind of problem: success isn't possible without changing the day-to-day behavior of people throughout the company¹. But changing behavior is hard, even for individuals, and even more so for groups of individuals.

Businesses need to predict and manage change to survive and thrive, but businesses are composed of individuals who are hard-wired to resist change.



The Business Condition is what hurts. It is your pain point.

And it is our *raison d'être*: Eventchain provides solutions to The Business Condition. Our Operational Cloning software simulates supply chain related operational changes so that they're visible, manageable and predictable.

We're fixed - maybe even *fixated* - on fixing The Business Condition.

The Business Condition is a very real problem, and like you, we spend a lot of time thinking, talking, and obsessing about it.

In fact, in a recent meeting in Seattle, we talked about it with Jim, who was involved with a study of the neuroscience of leadership.

As Jim explained, this study yielded interesting insights on change and how people learn:

- **Change is hard.** Of course we all know this, but now we know why: change makes us physically uncomfortable. Working memory - the part of the brain activated when new things are encountered - consumes more energy than the part of the brain dedicated to processing familiar activities. Another part of the brain detects the difference between the expected (known) and what is actually experienced, and *this* part of the brain is connected to fear circuitry. Change therefore triggers fear and animal instincts. And these triggered responses are *physical* - discomfort and the feeling that something is wrong - which reduces the capacity of people experiencing change to think clearly.
- **Silos are real and more than a function of territorialism or lazy thinking.** Silo mentalities, like responses to change, are connected to the physical structure and responses in individual brains. What you think about changes *how* you think.

"People who practice a specialty every day literally think differently, through different sets of connections, than do other kinds of professionals. In business, professionals in different functions - finance, operations, business development - have physiological differences that prevent them from seeing the world the same way."²

This new research confirms what we instinctively know about The Human Condition and The Business Condition: change is hard, and professionals in particular functions see the world through the lens of that function.

All of this creates individual and organizational resistance to business change.

And that resistance is precisely what managers and leaders grapple with when trying to introduce change, foster entrepreneurialism, and reward agile business thinking and practice.

Fortunately, even though we're hard-wired to resist change and see the world through our existing mental maps, our brains (and people, and businesses) are capable of so much more.

“brains are pattern-making organs with an innate desire to create novel connections. When people solve a problem themselves, the brain releases a rush of neurotransmitters like adrenaline. This phenomenon provides a scientific basis for some of the practices of leadership coaching. Rather than lecturing and providing solutions, effective coaches ask pertinent questions and support their clients in working out solutions on their own...”³

The solution, then, to fear-of-change and silo mentalities, is to *engineer epiphanies and integrate those insights into new mental maps*.

- **Epiphanies**

For insights to be useful, they need to be generated from within, not given to individuals as conclusions. This is true for several reasons. First, people will experience the adrenaline-like rush of insight only if they go through the process of making connections themselves. The moment of insight is well known to be a positive and energizing experience. This rush of energy may be central to facilitating change: It helps fight against the internal (and external) forces trying to keep change from occurring, including the fear response of the amygdala....⁴

- **Mental maps** are the result of epiphanies reinforced by sustained attention, engagement and daily practice.

The impact of mental maps suggests that one way to start is by cultivating moments of insight. Large-scale behavior change requires a large-scale change in mental maps. This in turn requires some kind of event or experience that allows people to provoke themselves, in effect, to change their attitudes and expectations more quickly and dramatically than they normally would.... [research] findings suggest that at a moment of insight, a complex set of new connections is being created. These connections have the potential to enhance our mental resources and overcome the brain's resistance to change. But to achieve this result, given the brain's limited working memory, we need to make a deliberate effort to hardwire an insight by paying it repeated attention.... That is why employees need to “own” any kind of change initiative for it to be successful. The help-desk clerk who sees customers as children won't change the way he or she listens without a moment of insight in which his or her mental maps shift to seeing customers as experts. Leaders wanting to change the way people think or behave should learn to recognize, encourage, and deepen their team's insights.⁵

When instigating change, then, leaders should find opportunities to engineer epiphanies for their teams (which is what the best coaches and therapists do) and then create frameworks of daily practice/immersion to reinforce the new insights.

(Which, when you think about it, is exactly how rehab facilities are structured: processes of inquiry and reflection trigger insights and epiphanies, which are then reinforced by the creation of new daily habits, so that when people return to their lives, they've ingrained and reinforced new ways of being and doing.)

All of this means that there's a formula for triggering change and new modes of thinking:

Epiphany + 'Attention Density' = Mental Map

Mental maps provide familiarity, which means that the brain doesn't signal to the fear circuitry that the unfamiliar and scary is at hand.

If managers can equip their people with mental maps of what the change will look and feel like, their people will be able to integrate new events and ideas and implement new practices rather than resist them. They'll literally be able to think - and therefore *act* - differently.

Mental maps lubricate the *'change is hard, and I can't see what it looks like'* friction.

So...a 3PL who designs new systems for customers and wants to help its teams *create* change rather than resist it - and needs to dissolve silo mentalities - literally has to help its people think differently.

The key then - to fluid, effective change management and agile business thinking and practice - is to *engineer epiphanies*.

And then reinforce those epiphanies with opportunities to integrate and reinforce these insights into daily practice, thereby creating new mental maps.

~

And that's what Eventchain does. We're in the business of engineering epiphanies.

~

Our talk with Jim about the neuroscience of epiphanies led *us* to an epiphany.

Prior to this conversation, our first step in the cloning process was to establish a profile of the targeted organization.

The inputs to this process are:

- the physical characteristics of the products,
- the shape of the demand profile
- the attributes of the physical and logical infrastructure that would service the demand and distribute the product.

These inputs, combined with the operational business rules, are the “DNA” containing all the necessary information from which the clone is constructed.

After completing our first project and talking to Jim, something struck us.

The “clone DNA” among companies that are in the same product category, size and market are similar - which means that although there are many variations in operational design among similar classes of companies, *a close-to-optimal design for a certain profile must exist*.

Up until this time, we *had* been using the real world operation to establish its avatar (or virtual representation of itself).

But, if close-to-optimal designs exist, why not reverse this?

We could create avatar DNA optimally designed for a particular class of supply chain operation. This “blank clone” could then be inhabited by the personality of a particular operation.

And...based on our new optimal-design insight and process, we could create an *entire library* of blank clones to be used by our customers in their business development and operational design processes.

A library of blank clones representing a target market would be especially useful to 3PLs or systems integrators. After all, they regularly design and implement new operations for customers. Having a suite of virtual customers on which to test designs would save time and money - *and* create opportunities for team members to learn and reinforce those learnings before the customer even came on-board.

~

Case Study

The Role Play

Back to our role play. *You're a 3PL.*
It is three months after the cut-over of a new distribution operation that has most of the complexities (and pain points) found in the high-technology product and market segment. (For details on the operation see Appendix A). Your distribution facility is part of a larger global distribution network and involves finished goods distribution, spare parts distribution and recovery, RMA and work orders (localization and minor assembly).

You feel tired and bruised, wondering how many more times you will have the energy to go through the process of competing for, winning and implementing complex new operations. You wonder whether things can be different. You are offered the opportunity to go back in time and use the Eventchain Operational Cloning process to predict and manage change in advance of launching a new operation. This process will help you make sound macro and micro-business decisions, and allow your team to tangibly experience the new operation before it happens. This means they've thought through the operational change so that when it really happens it will be familiar. This, in turn, means that the learning curve is mostly complete before the new operation is implemented, reducing the friction of real-time change management. You jump at it and decide to compare your actual experience, i.e. where you manage change as it happens, on the ground, in the midst of competing priorities and a steep staff learning curve, with what is about to happen.

We're Eventchain. We know that operational change management for existing operations is an after-the-fact activity challenged by the distractions of immediate priorities.

Our Operational Cloning triggers epiphanies and new mental maps by creating the opportunity to experience a new, virtual reality.

Operational cloning is a vivid representation of a future state. It engineers epiphanies, and then reinforces them.

Eventchain's software means that the change management and learning for a new operational design and project happens *before* the operation is realized.

Which means you and your team members can get it right before you realize it.

~

The Backstory

Here's how we do it.

We go back to twelve months prior to winning your current contract, where you decide to work with Eventchain, who will

- establish a library of blank clones based on you target market,
- train your operational analysts to use the Operation Cloning software, and
- implement the new customer engagement process in a part of your organization.

This constitutes a big shift from how things happen now, but you understand how people experience change and have a strategy.

You know that successful implementation will lead to a higher hit rate for customer prospects, lightning fast customer engagement and create operational deployment with predictable financial performance.

So, to get started, you review your business plans for the next year and meet with your business development team to get a clear understanding of potential future business.

From this list you distill a short list of blank clones designed to represent target customers.

After that, your operational and business analysts work with Eventchain to design, build and test the suite of blank clones.

All of this pre-work has a tangible benefit.

Now, you know the characteristics, KPI's (*and* can benchmark those KPIs) for each of the blank clones in your stable. In addition, you have a price list and agreed source list for all components used in the blank clone.

As part of establishing the blank clones, your LEAN team works with the operational analysts to leverage and establish standard times for micro activities, from unit picking to lift-truck positioning for loading, for example.

IT is integrated in the design, too. For each blank clone, a configuration for the supply execution systems is designed and tested.

Together with Eventchain, you use your suite of blank clones to train your operational staff on the physical and process design of these new operations.

Simulations of the operations create environments where your team can literally see and experience the future of the operation - which means insights are triggered and reinforced.

Which is exactly the point.

Because in order for insight to occur, a person needs to work through the material herself *and* intensely focus her attention on both the material and its context.

To make sure that this process happens, you remove your operational staff from their current duties to an entirely different environment where they will be introduced to the blank clones and the new process of deployment.

The visualizations shift the mental maps of your people. Eventchain's simulations *create and reinforce expectations of what reality will be like once the actual operation is established* - which in turn will ease the friction of real-life, real-time change management.

Getting Started

RFP Process

With Operational Cloning

Four months prior to winning your current contract you receive an RFP from a technology company.

You request line level in and outbound order history, and SKU packaging configuration with volume and weight attributes.

Operational analysts use the Eventchain transformation tools to distill these inputs into a standard profile format.

The profile is then compared with the profiles of the existing blank clones in your stable. A suitable match is found.

The actual profile is uploaded into the blank clone and it is born.

This process takes one week.

Time is accelerated in the blank clone so that in the space of one week it lives for the equivalent of a simulated year.

Finance extracts the financial model from the clone and presents it to you for consideration.

You already understand the financial results of the customer blank clone and review to confirm that the expected ratios hold.

The customer receives a sales presentation which includes the time-travel visualization of the operation and projected KPI results.

The duration from receiving the profiling data to presentation and financial model is two weeks, or a **total effort of 10 work days**.

Without Operational Cloning

Four months prior to winning your current contract you receive an RFP from a technology company.

The customer provides profiling data. Operational Analysts complete their review using spreadsheet manipulation and the results are informed by their own experience and background.

The summary KPI results are fed to finance who consolidates the results into another spreadsheet- based financial model.

In the meantime, the physical design and process design is being completed by the process analysts.

The proposal is then compiled and summarized into a customer presentation.

The duration from receiving the profiling data to presentation and financial model is two weeks, which amounts to a **total effort 40 work days**.

Contract Award

With Operational Cloning

The contract is awarded and a building that suits the network design and physical design (as it exists in the blank clone) is selected.

Every team member and stakeholder - including operations, IT, suppliers and the customer - involved in the implementation comes equipped with an intimate understanding of how the new project will unfold.

They have already experienced the virtualization and integrated its learnings, so the issues at hand are simply project management and quality control.

Without Operational Cloning

The contract is awarded and a building that suits the network design and physical design is chosen.

IT and operations now go through the traditional process of systems and physical implementation. The usual method for design, configuration, testing, training and implementation is followed.

In this process, virtually every aspect of the original design is revisited.

Post-Implementation

With Operational Cloning

On cut-over the clone of the actual operation is refreshed and synchronized.

The operational team compares actual KPIs with the KPIs in the clone and variations are investigated to quickly identify issues such as poorly performing staff, training or process issues.

The operation settles down within two weeks.

Without Operational Cloning

The normal cut-over issues are experienced: last minutes process reconfiguration and poor KPIs initially as staff learn the operation.

Performance settles down in three months.

Results

Using the Operational Cloning process we compared the operational performance of our two scenarios.

The base case (traditional approach) design was the result of a dedicated 3PL design team. The alternative case (blank clone approach) design was done simply using common/standard design components applied in a sensible format. For the alternative case, the physical facility design was machine generated using the Operational Cloning software.

Over and above the benefits pre-operational start, the results show, that on average the alternative case required 20% percent less resources for outbound processing. Using the financial model of the base case, the alternative case would have produced improved profitability of 24%.

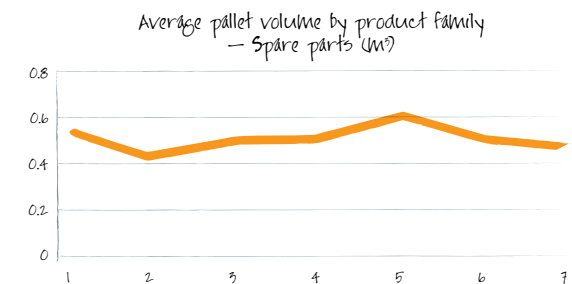
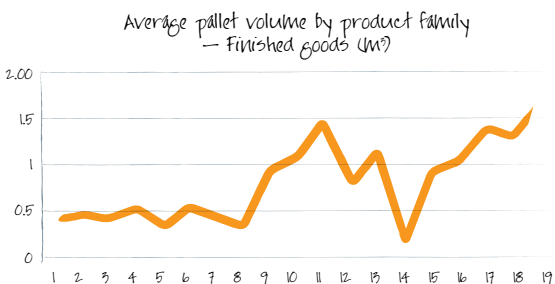
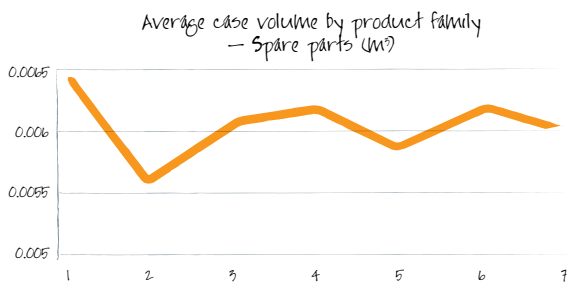
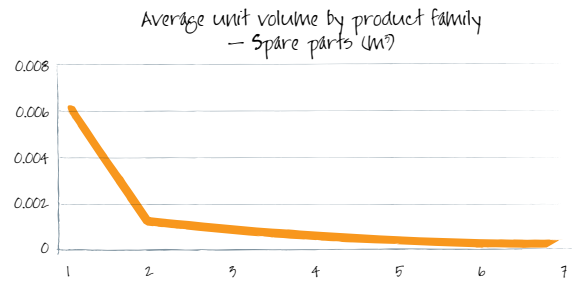
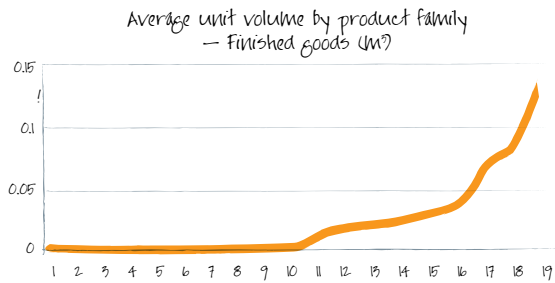
And *that* doesn't hurt at all. No need for sofas and sad stories.

Appendix

SKU profile

The profiled operation holds 2924 SKUs with 26 different product families. There are 915 finished goods SKUs and 2009 spare part SKUs. The inventory is imported. The supplier base of twelve vendors are primarily located in China and Taiwan.

	Finished Goods	Spare Parts
Average unit volume	0.024 (m ³)	0.0012 (m ³)
Average case volume	0.031 (m ³)	0.006 (m ³)
Average pallet volume	0.8 (m ³)	0.5 (m ³)
Average unit weight	6.54 (kg)	1 (kg)
Average case weight	7.6 (kg)	9.3 (kg)
Average pallet weight	200 (kg)	780 (kg)
Average units shipped per month	605,000	36,500



Demand profile summary

For finished goods the:

- Average number of orders per month: 25,000
- Average number of order lines per month: 66,000

For spare parts the:

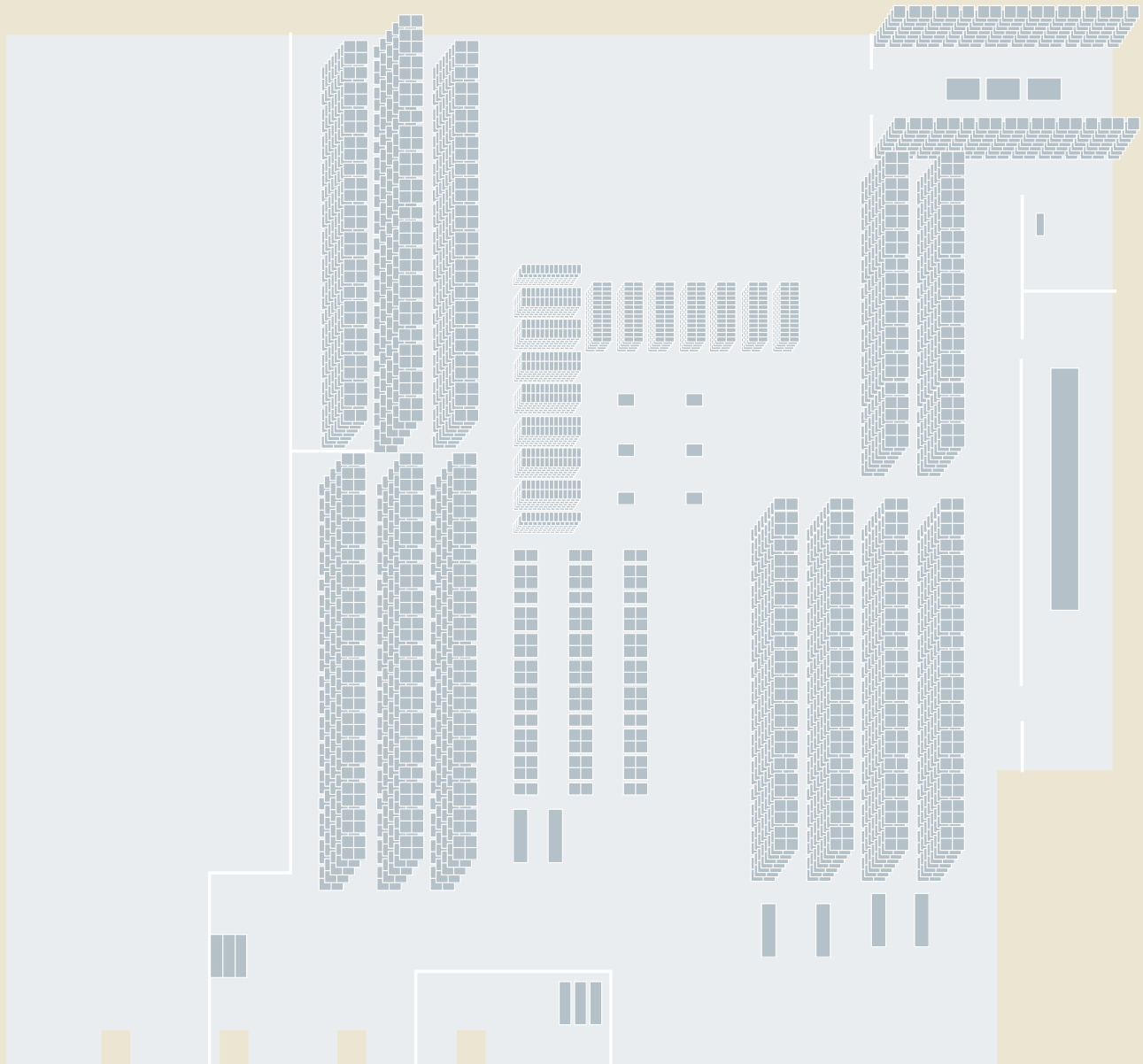
- Average number of orders per month: 32,000
- Average number of order lines per month: 38,000

Warehouse physical design

Without Operational Cloning scenario

The warehouse floor area is 9,870m², with 6,580m² dedicated to this customer.

The warehouse has three trailer doors, two primarily used for receiving inflow and one for primarily used for shipping outflow. The receiving, temporary pick-face, shipping pallet-build and trailer load staging areas are block stacked floor-level storage.



Warehouse physical design

With Operational Cloning scenario

The warehouse floor area is 7,227m².

The warehouse has four sets of trailer doors, two used for receiving inflow and two for shipping outflow. The receiving, cross-dock, shipping pallet-build and trailer load staging areas are block stacked, floor-level storage.



Warehouse processes and systems

The 3PL makes use of an RF-driven WMS system. The customer ERP system and the WMS is integrated via EDI messages.

The warehouse services three summary processes, finished goods distribution, spare parts distribution and recovery, RMA and work orders (localization and minor assembly). Outbound operations services branded retail stores, the online store (internet sales) and other retailers.

Expected inventory is created as purchase and transfer orders in the WMS via the ERP integration. New inventory (finished goods and spare parts), arrive in truck loads. 80% of all inbound inventory is shipped via air. The inventory arrives in pallets and loose cases. All inbound inventory arrives labeled. Pallets contain mixed SKUs where order quantities are less than full pallets. The inventory is unloaded and staged in an assigned receiving lane in the warehouse. The delivery manifest is matched to the delivered inventory and the manifest signed. In the case of a new part, the receiving leading hand assigns a primary location. Receiving staff receives the inventory via an RF device. Once a receiving lane of inventory has been systemically received, the inventory becomes available for put-away. Each SKU has either a primary location (fixed bin) or is placed in the next closest location available.

The return inventory process starts with an EDI message to the WMS. Returned inventory may arrive either from a branded service provider or retail store where the inventory has been classified as faulty or be returned from another source where the condition has not been verified by a trusted source. Returned inventory from branded service providers and retail stores are consolidated by the carrier and delivered by truck. Returned inventory is unloaded and

verified against the paperwork. The inventory is then moved to the faulty part receiving area for induction and put-away. The details of the returned part are verified against the internal tracking system. The RMA# on the carton is scanned as well as the serial number on the part or device. If the details match, the item it is returned to the box or packaging. Mismatches are moved, pending investigation. The WMS then produces a label that contains the put-away location and also does the receipt and put-away systemically. The faulty label is applied to the physical item and placed on a trolley. Once the trolley is full, the items on the trolley are physically put-away.

Returned inventory from other non-trusted sources that have been indicated as faulty arrives via a different carrier as individual deliveries. Each item is inducted into the screening centre where the items are inspected and verified to the warranty terms and conditions. Items which fail inspection are returned to the sender. Items which pass are moved to the faulty receiving area for induction and put-away. From this point on, the receiving and put-away process is similar to a trusted source faulty part receipt.

If the inventory is found to be faulty it is either scrapped or prepared to be shipped to an OEM for repair. Mis-picks are put-away as new inventory.

The base-case outbound process for finished goods and spare parts, leverages the process of constructing dynamic pick-faces that consolidates demand by pick-wave. Replenishment quantities are rounded up by handling unit. Full pallet replenishments are scheduled to be completed first. The dynamic pick-face is completely cleared before the next replenishment cycle can start.

The pick process varies by whether an over-pack is required or not, i.e. whether the handling unit is big enough to be shipped as-is or whether it needs to be packed (consolidated) into a carton for shipping.

First, shipping labels are printed for the picks (in the wave), that do not require an over-pack. Shipping labels are printed in the sequence of the dynamic pick-face SKU slotting. Labels are printed by carton. The shipping labels are then applied to the cartons on the pallets in the dynamic pick-face. Once a pallet is completely labeled it is moved to a packing station where it is scanned (SKU, serial number and order), physically checked and retail price labeling is applied as needed. The scan confirms the pick and the pack systemically. Once this has been completed, it is staged in the shipping area for loading. If the freight service varies for cartons on a pallet it is separated onto a separate pallet at the packing station.

Next, the items that do require an over-pack are processed. An order pick slip is printed with its associated shipping labels. Pick slips are assigned to pickers that physically pick the orders into inducted cartons and stages it in a packing queue. Here it is scanned (SKU, serial number and order), physically checked and retail price labeling is applied as needed. The scan confirms the pick and the pack systemically. Cartons are separated by service and placed on pallets. Once a pallet has been built it is staged in the shipping area for loading.

Once a wave has been completely picked, the unconsumed inventory is returned to the racking before the next cycle starts.

The alternative scenario (The With Operational Cloning scenario) uses traditional pickface replenishment with order picking.

The shipment of faulty parts to the OEM for repair starts with the customer sending a shipment order for parts to be returned to the OEM. Orders are grouped by ship-to hub (Country). These orders are then picked, staged, labeled and packed in a carton for shipment.

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3. Rock and Schwartz, 2006, Humanism is Overrated section, ¶ 3
4. Rock and Schwartz, 2006, Attention Density Shapes Identity section, ¶ 1
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eventchainsystems.com

North America

Telephone +1 604 377 9104

Suite 600, 666 Burrard Street
Vancouver BC V6C 2X8
Canada

Asia Pacific

Telephone +61 2 8920 1422

Suite 3, 100 Walker Street
North Sydney NSW 2060
Australia

