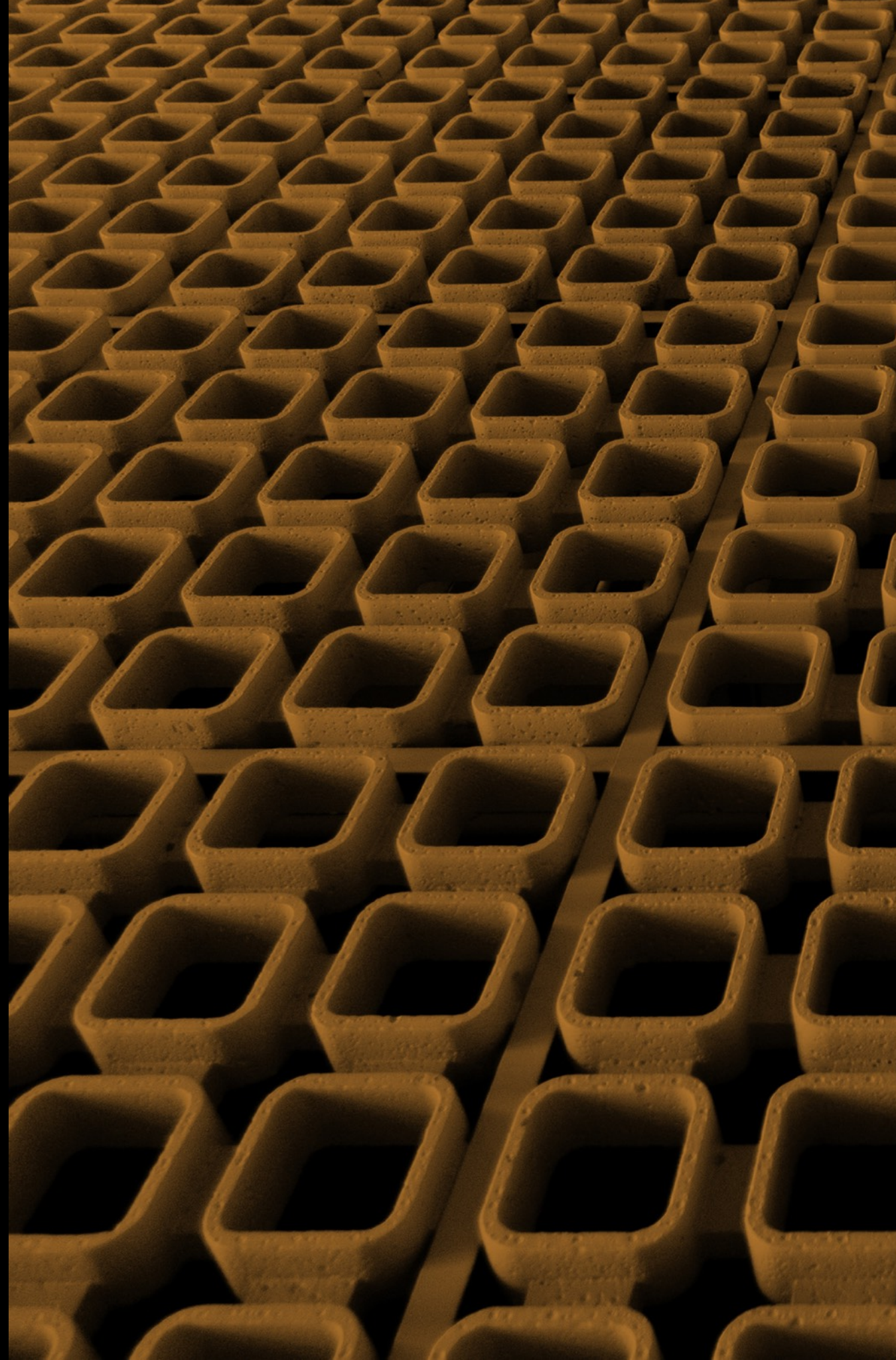


ADAPTIVE DESIGN & DEPLOYMENT

A THRUPUT PARTNERS Part 1

Author: Brian Hudock, CEO



This is how things change

RETHINKING THE PROCESS

Waterfall vs. Agile Development

WES changes everything

Iteration for the better

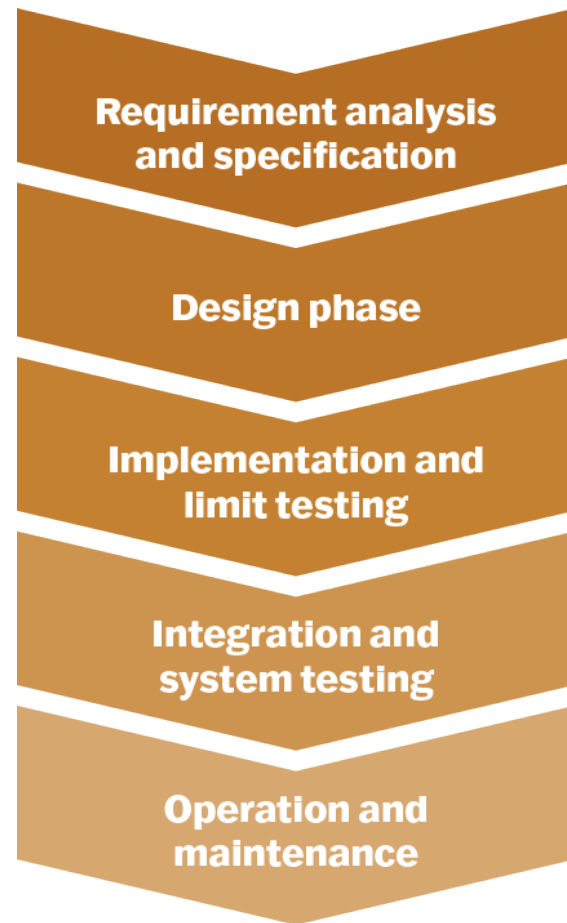
Adaptive Design and Deployment Part 1

Approach defines outcomes. We've all experienced an individual who at some social gathering is solely focused on one thing. Whether it's a conversation topic, music choice, or quality of the food provided, that person causes others - more often than not - to react and adjust their actions. It's an often difficult situation and mostly annoying to have to deal with. And while material handling isn't at all like a cool cocktail party, it's very much a social gathering in that it feeds off of the input from a vast array of people supplying it. And if it's too narrow in how it manages ebb and flow, you wind up a little uncomfortable and wanting a change.

The material handling world has been built using waterfall project management as steel structures are both linear and dependent upon an extremely narrow sequence of events. A site is picked, a design put together, the floor poured and the building prepared for equipment installation, equipment is approved, equipment is manufactured and shipped to arrive when the building is ready. Equipment is then erected, power and controls added, systems tested and we start shipping.

Well maybe I have been around longer than I admit, as today software and technology generally define the critical path and an agile development approach is more common. However, these two deployment approaches and methods tend to conflict the more integrated they become.

WATERFALL MODEL



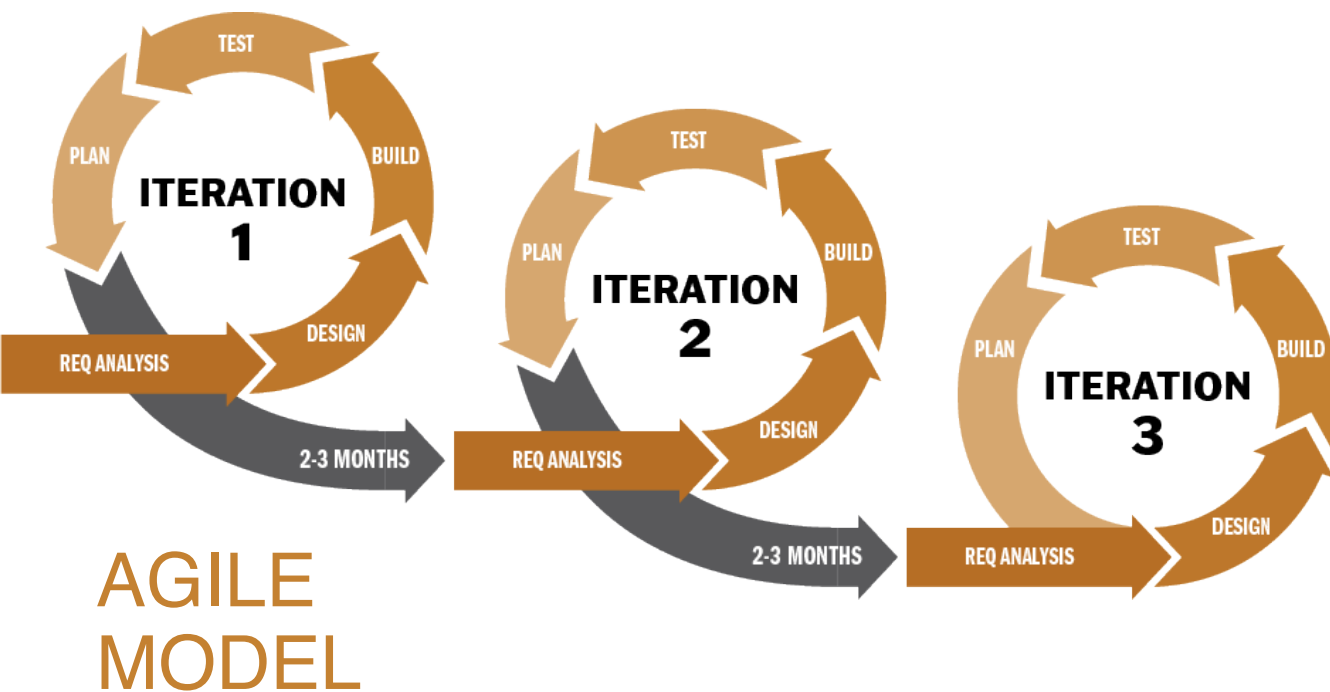
Automation and Warehouse Execution System developments are keys to driving this integration so the option of being both waterfall and agile in automated MHE projects, while possible, can be a painful and risky strategy. If nothing changes from the design stage, this dual approach strategy may work. However, as the pace of change increases, no design is “Locked Down” for long.

This is the new reality for Supply Chain.

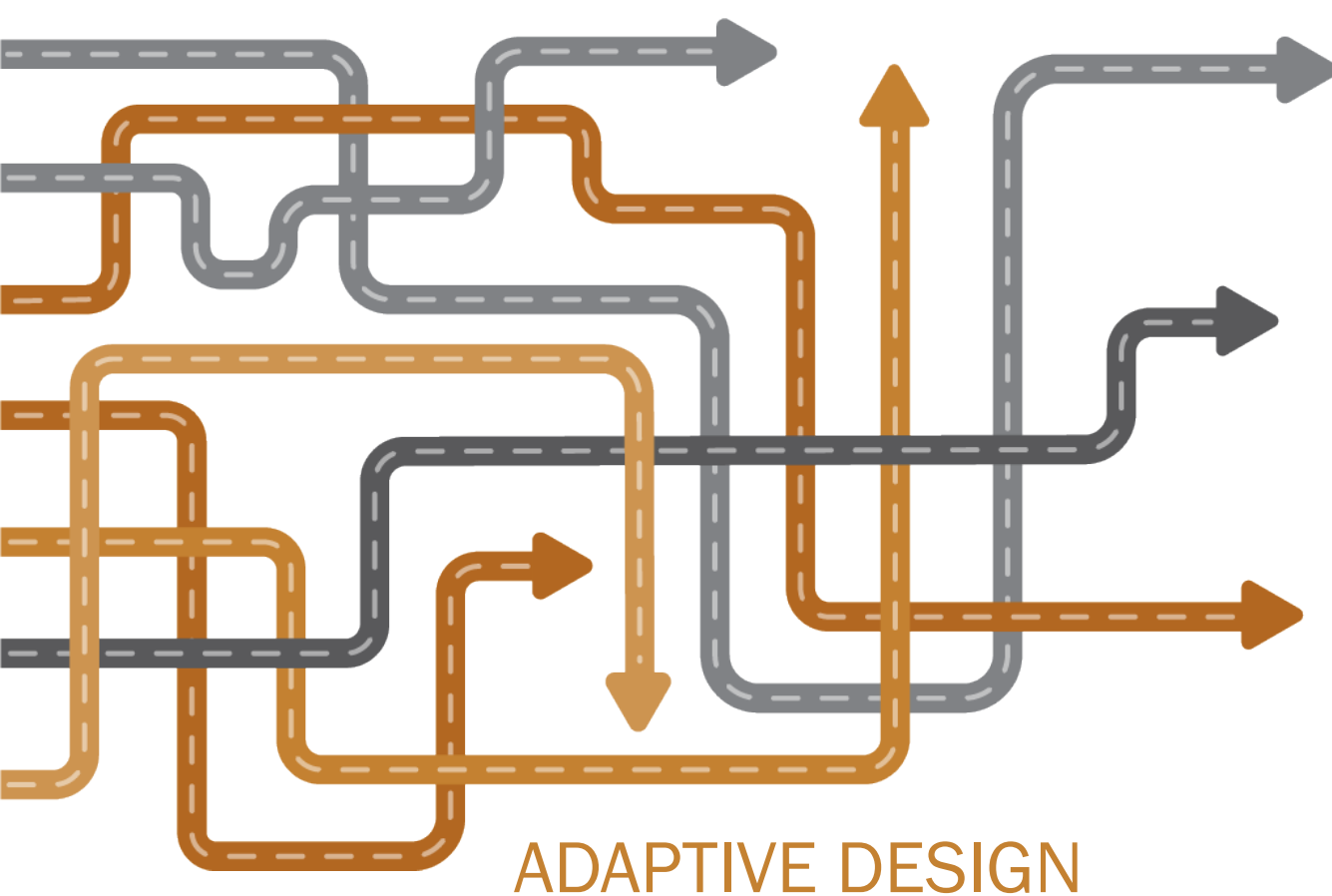
So, what is the right answer. Agile for equipment is challenging, locked down designs equal schedule delays and expensive change orders, while waterfall for technology establishes barriers to innovation and generally restricts productivity of solutions. Some level of hybrid version of the two mainstream approaches has been highly successful.

Our team has been working to refine the hybrid approach and now understand it is much like the requirements, ever shifting. We are referring to this as **Adaptive Deployment** which must be preceded by **Adaptive Design**.

If Waterfall is a road trip on a single planned path with carefully scheduled and timed visits, and Agile is jumping in a car and knowing you have to be at your destination by a particular date with lots of detours, then Adaptive Deployment is mapping out multiple paths and multiple destinations before departing. Additionally, it's akin to making adjustments at each checkpoint based upon the weather conditions.



AGILE MODEL



Mapping out the multiple paths is Adaptive Design.

In simple terms, let's think of business requirements, disruptions, and forecasts as the weather and your sales and merchandising teams as the meteorologists. Your sourcing, transportation and distribution operations are the path and servicing the customer the destination. We all know how accurate most meteorologists predict the weather and 2020 has been a particularly special year.

If you planned infrastructure 12 months ago based upon predictable weather, how far underwater are you?

With an Adaptive Design approach, you would have planned for the unplanned. A simple example would be a warehouse built to store inventory and ship cases/pallets B2B with fixed rack and specific trucks was designed and equipment purchased.

With an Adaptive Design approach, you would have planned for the unplanned. A simple example would be a warehouse built to store inventory and ship cases/pallets B2B with fixed rack and specific trucks was designed and equipment purchased. Midway through the project, the need to ship direct to consumers (B2C) arose. Normally this would be a major retrofit and space would not exist for broken case picking, order consolidation, order packing or docks for parcel loading built. Adaptive design would have considered this potential in what if scenarios and determined the requirements to adapt based upon probabilities. Design considerations might have included additional space (white space) in the building, alternative racking/truck selection to allow for floor level pickers to mix with pallet vehicles, racking capable of conversion from pallet to carton would flow to increase pick faces, or other options based upon projections. In addition, location mapping, product slotting, and pick paths would have been delayed allowing for rapid conversion and to minimize configuration changes. However, the functionality to do all levels of picking, replenishment, and pack out allowed for in base warehouse management system functionality is needed.

Adaptive Design requires investment upfront on projects in terms of design, space, equipment, and systems capabilities, but when done well can save operations in many valuable ways including:

Designing for flexibility, particularly in fixed equipment and not designed for current peak targets (build in excess capacity), that often occurs due to budget cuts limits Adaptive Deployment options to leverage technology configuration capabilities across multiple systems and controllers. Think about a conveyor system that is routed to a single picking area and then to pack areas. The choice of conveyor can allow for additional lines to be routed in and out of a primary line and done quickly, while the wrong selection will require a complete line conversion or separate second line that limits up and downstream options. The more complex the operations, the more restrictive and difficult this becomes.

An adaptive design approach gives us a best of both worlds and creates a way for us to define the outcomes we want. It's flexible and adaptable to the shifting work and circumstances throughout this work while allowing for the right levels of adaptation and work flow.

Feel free to call us to discuss how to be Adaptive and be on the look-out for "Part 2 - Adaptive Deployment"

ThruPut Partners

380 Interstate North Parkway, SE Suite 210

Atlanta, GA 30339

833-888-9981

Email: info@thruputpartners.com

LinkedIn: [@thruputpartners](https://www.linkedin.com/company/thruputpartners)

MUST HAVES

(a checklist for what will make Adaptive Design work)

- **Rapid deployment**
- **Shorter premium manual labor stages**
- **Shorter off-site space leases**
- **Faster market entry options**
- **Reduced conversion costs (demo and rework)**
- **Minimize operational disruption (deployment and post go-live)**
- **Reduced systems reconfiguration and modifications**
- **Increased safety with less congestion from shoe-horned solution**
- **Better long-term efficiency leveraging right technology, equipment, and designs**