

Packaging Complexity –

How to cope with increasing numbers of small volume SKUs

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VP Capability Development
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2009 to current: Vice President Capability Development, Be4ward Ltd, assisting a number of Pharmaceutical clients with packaging management related engagements.

2007 to 2009: headed GlaxoSmithkline's pharmaceutical Global Packaging Strategy.

- Defining GSK's global supply chain strategies for each product dose form, standardising packaging equipment, components and SKUs.

2001 to 2007: global head of pharmaceutical packaging for GlaxoSmithkline, responsible for:

- Structural design, artwork and creative services, packaging legislation, complexity reduction, technical capability development and packaging supplier base development.
- Across portfolio of 25,000 SKUs and 150,000 packaging components.
- Led Global Pack Management Project, a £25m re-engineering of GSK's product change management capability.
 - Implemented Product Lifecycle Management software to 4000 users in 160 markets.
 - Ensuring timely & accurate product changes to meet product launches whilst maintaining product safety information.
 - Reduced information/artwork related recalls by 80%.
 - Rationalised artwork supply from 250 studios to 4 global artwork service centres, one based off-shore in India.
- Established GSK's global packing design capability to drive product standardisation, legislative compliance, effective packaging support to product launch and the company's capabilities to manage SKU portfolios.
- Led definition of GSK's strategy for serialisation, authentication, anti-counterfeiting and product coding.

Prior: GSK and specialty chemical industry in various supply chain and operational roles.

- Experiences in merger integration, supply chain process and systems implementation, product acquisition and divestment, lean and six sigma deployment and operational management.

Masters Degree in Engineering, MBA and Chartered Engineer.

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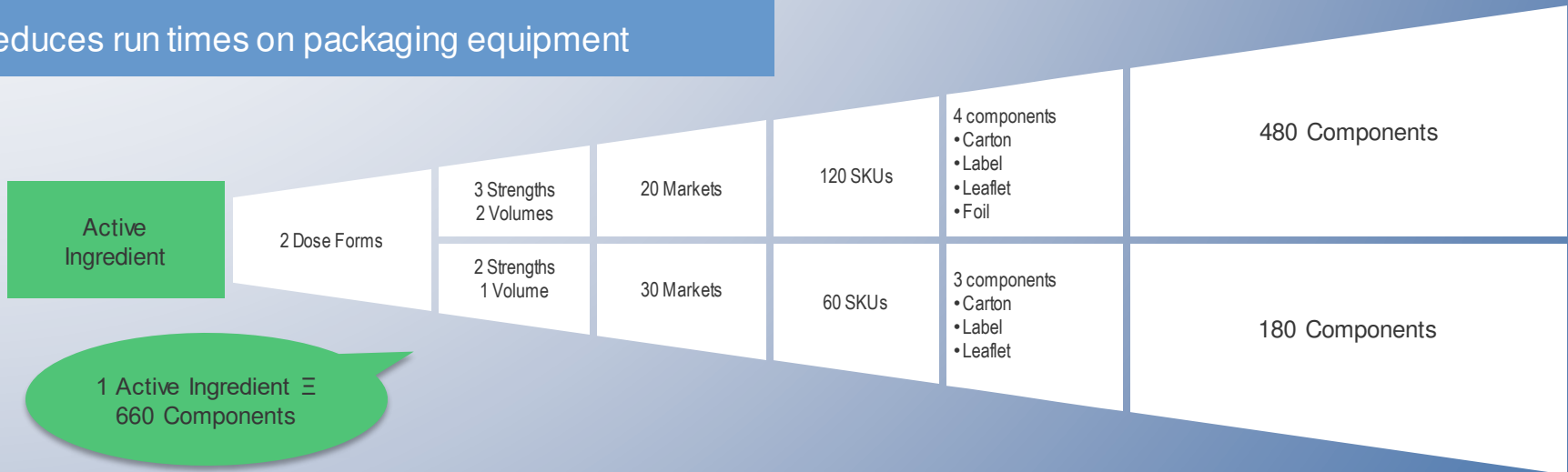
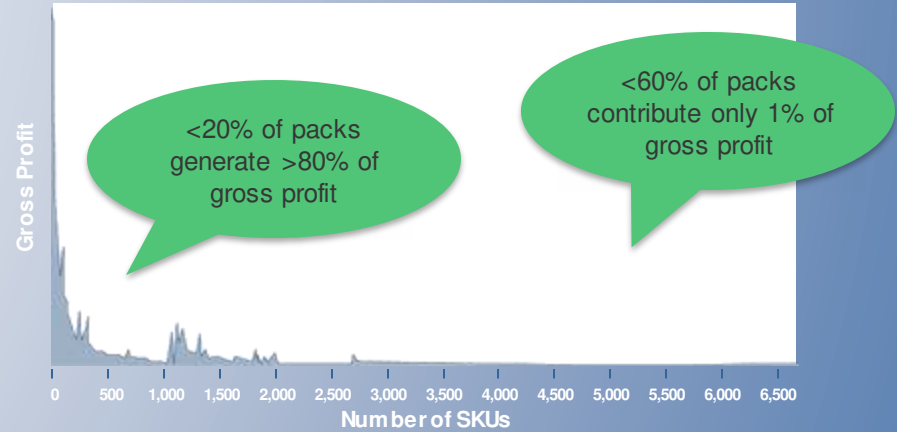
What is packaging complexity?

Product portfolios are expanding

Resulting in an explosion of packaging components

Creates significant hidden factory to manage

Reduces run times on packaging equipment



How many of your products sell less than 10,000 packs per year?
That is sales of less than 30 packs per day.

Why does packaging complexity occur?

INTERNAL DRIVERS

MARKET EXPANSION

- Increasing number of country specific labels
- More SKUs

NEW PRODUCTS, DEVICES AND LINE EXTENSIONS

- Additional products driving more labelling requirements
- More SKUs

INCORPORATE NEW SUPPLY CHAIN SCENARIOS — PARTNERS, ACQUISITIONS, JVs

- Evolution of deals to maximise opportunity
- Increasing number of country specific labels
- More SKUs

Increasing Packaging Complexity

- Greater volumes of changes, information managed, people involved and drivers for change
- A growing portfolio of smaller volume products requiring advances in replenishment techniques
- Greater enablement of third parties
- More demanding internal and external environments
- Compliance, cost and speed....

EXTERNAL DRIVERS

PACKAGING LEGISLATION

Increasing levels of legislation are impacting the physical design of packaging

- Braille
- Openability
- Child resistance
- Readability
- Environment, waste, recycling

MARKET-SPECIFIC DEMANDS

- Market regulation remains a moving target at a country and regional level
- Regulators increasingly aware of artwork issues

- Temperature control
- Branding rules
- Serialisation/Barcoding

COMPETITIVE PRESSURE

The market demands are increasing the pressure on supply of product

- Speed to launch
- COGs
- Working capital

All indications are that complexity will increase.

Complexity causes a number of issues

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1. Compliance issues

- Jurisdiction control
- Uncontrolled repacking

2. Lost commercial opportunities and product unavailability

- Supply cost vs. volume
- Stock outs

3. Manufacturing inefficiencies

4. Support function inefficiencies

- Regulatory, artwork, purchasing, warehousing etc.

5. Obsolescence

- Shelf life of finished packs
- Economic order quantity of components

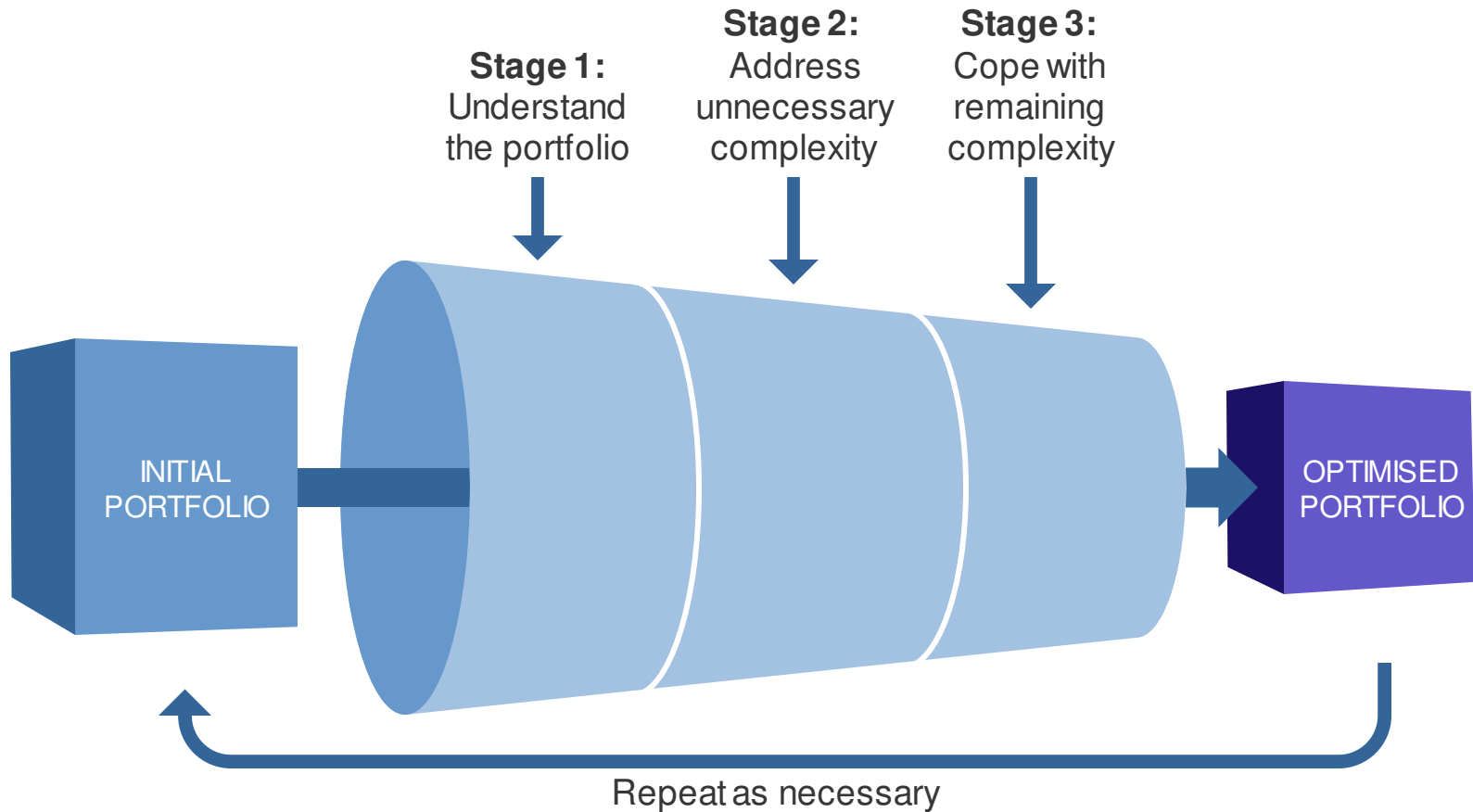
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You can't avoid complexity in today's market place



It is the challenge of how to cope with GOOD complexity, whilst controlling BAD complexity.

There is a funnel approach to dealing with complexity



Routine reviews need to be built into your business cycles.

Stage 1: Understand your portfolio

3

Understand the product order profiles

- Runners, repeaters or strangers

2

Understand the portfolio of SKUs

- Descriptions: strength, dose form, volume etc
- Component ranges
- Sales volumes
- Supplied to and from
- Point on product lifecycle

1

Understand the commercialisation strategy for the product/therapy

- What requirements are needed to effectively service the market?

Case Study

CHALLENGE

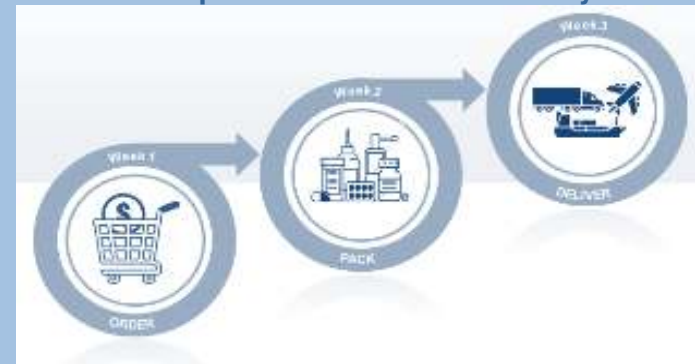
>60% of SKUs are low volume

	Unique Products		Volume	
High Volume	100	20%	100Mio	59%
Mid Range	100	20%	50Mio	29%
Low Volume	300	60%	20Mio	12%

Are you set up for this?

AMBITION

Step Change improvement
Responsiveness and Efficiency



REQUIREMENTS

New Equipment (Sites)

Modern Technologies

- Alongside the As-Is for large volumes
- Late Stage Customisation

New Processes

New/Adapted Processes and Controls

- New Late Stage demand fulfillment
- New Stocking point, bulk blisters
- Lower lead time standards
- New automated controls

Stage 2: Address unnecessary complexity – *Remove all unnecessary or non-value added complexity.*



Clear approval and control processes for portfolio additions ✓

Control brand variation ✓

Prune the portfolio regularly ✓

Control platform sizes ✓

Standardise layouts ✓

Minimise range of fonts, illustrations and graphical elements ✓

Share components or packs ✓

Bundle changes ✓

Sort, Stop, Standardise, Share

Step 3: Introduce capabilities to cope with necessary complexity

Manage order quantities of components and finished packs ✓

Postponement techniques ✓

Late customisation techniques ✓

Design your packaging to maximise opportunities to deal with complexity ✓

Build flexibility into equipment ✓

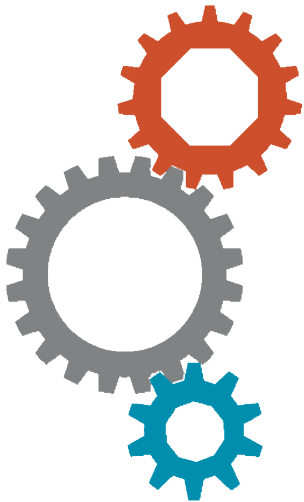
Speed up line changeovers ✓

Supply Chain design and hubs ✓

Outsourcing ✓

Plan for future legislation ✓

FOCUS: Postponement and Late Stage Customisation



Late Stage Customisation is...



Blister

Customise
(Aluminium/PVC printing)

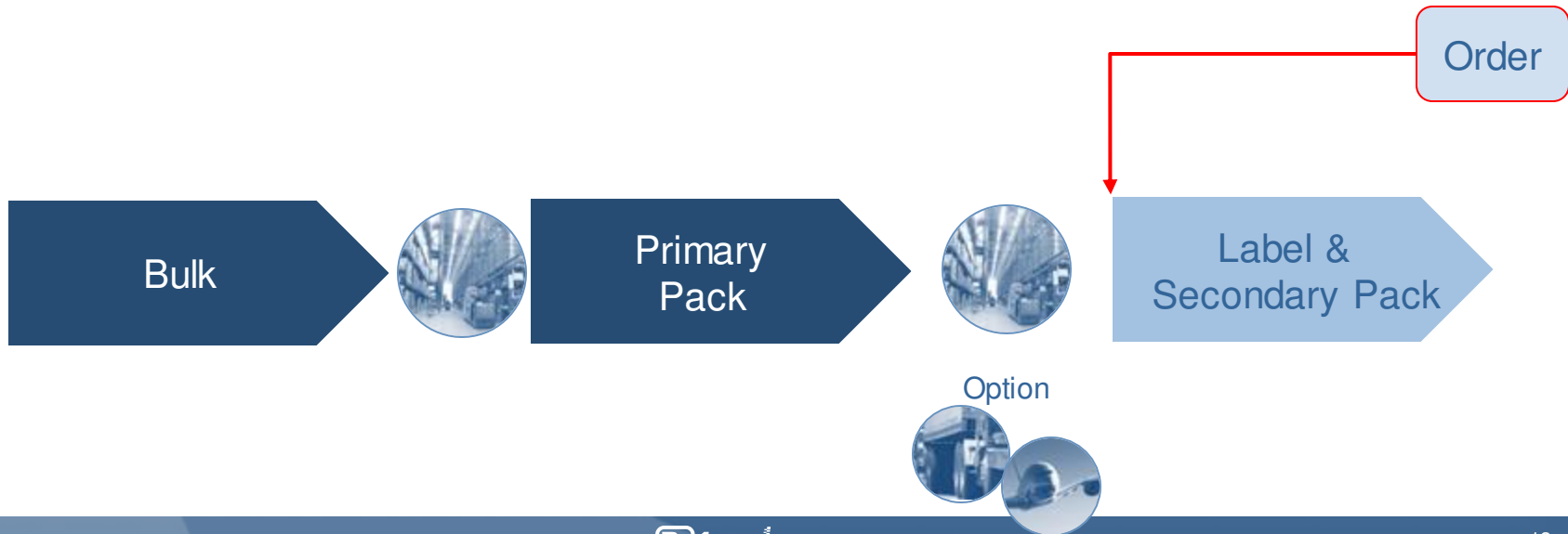
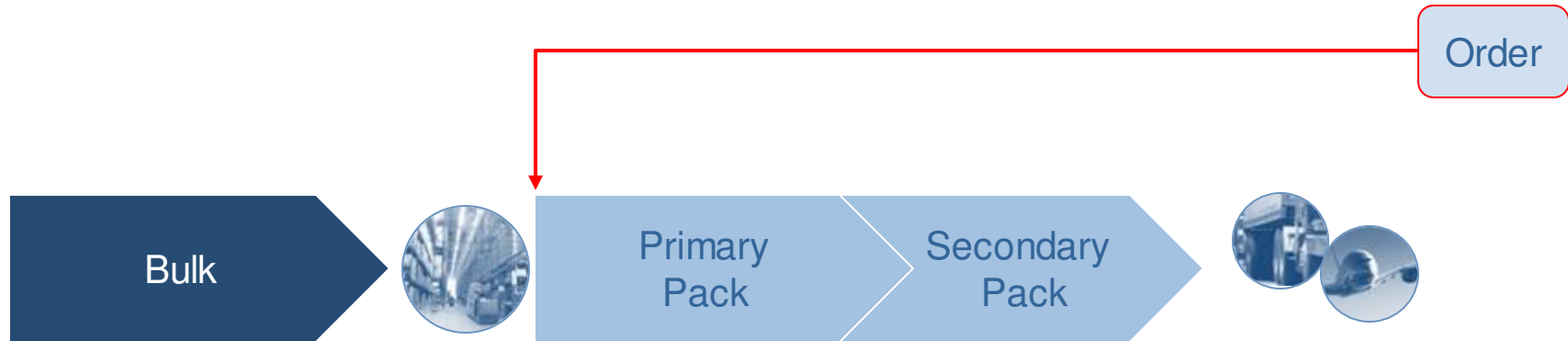
Carton and Leaflet
(Hand or Machine)

Late Stage Customisation exploits:

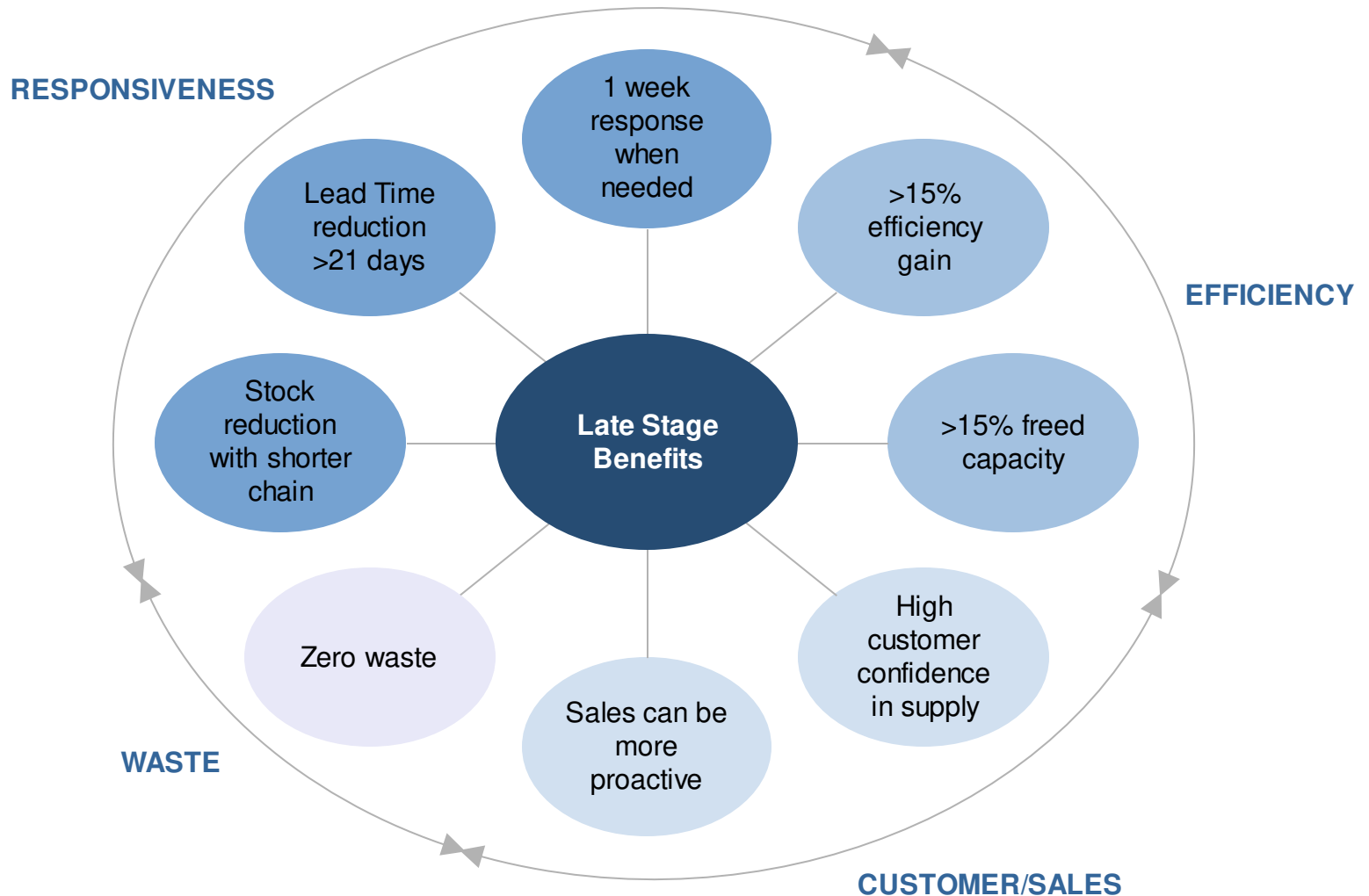
1. The stand alone speed of blister machines.
2. New technology to make blisters market specific.
3. Packing tools with short changeovers and high reliability.
4. Low cost locations close to the market for final packing.

or

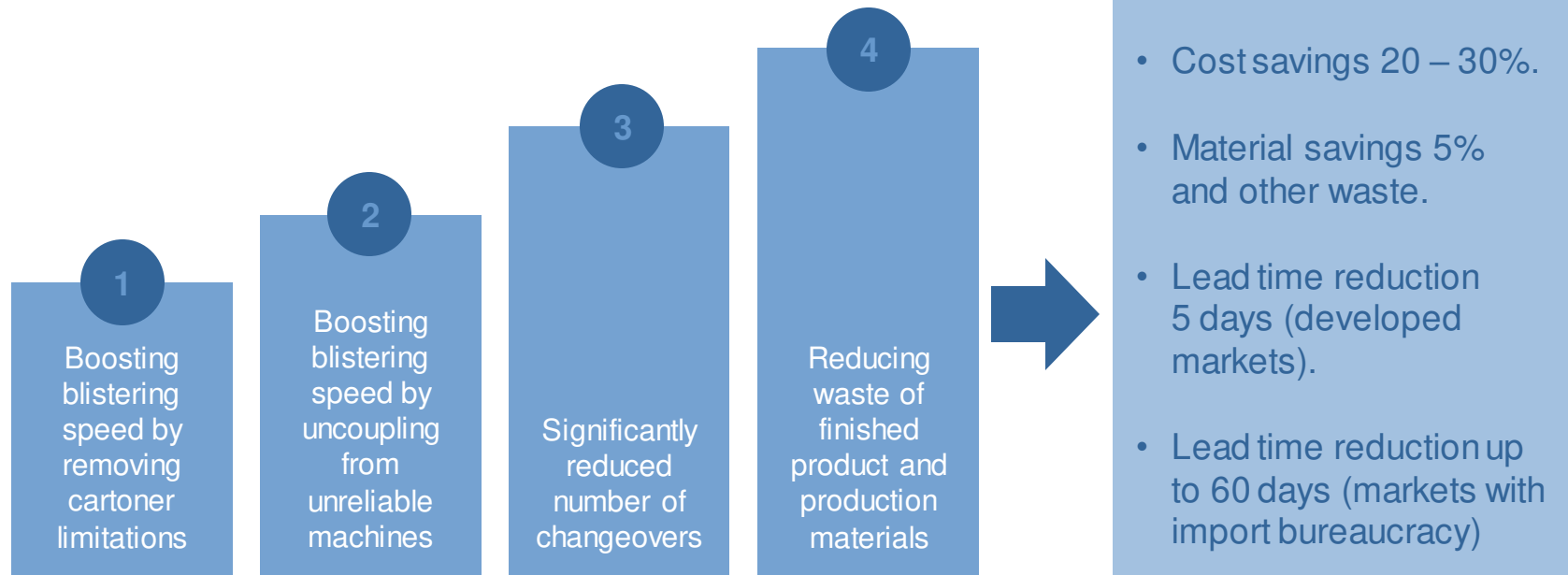
With postponement we bring uncustomised stock closer to the customer (physically or metaphorically)



The postponement Business Case



Late Stage Customisation: Cost Levers



Late Stage Customisation: Key considerations

Do your SKUs fit with Late Stage Strategies?

SKU Count	>100k	10 – 100k	<10k	% <10k	Grand Total
Sustained Brand	5	23	160	85%	188
Spoke Brand	7	21	82	79%	110
Diabetes Brand	7	22	93	79%	122
Grand Total	19	66	335	80%	420



✓ Small Volumes

✓ Blister and Pack Dimensions and Materials

✓ Demand Patterns

Optimum Strategy for Customer



✓ Decoupled High Speed Blister

✓ Magazine
✓ Bulk blister in carton

✓ Alu/PVC printing

✓ Carton in Region

Strategy Details



✓ Pack to white Box vs Magazine

✓ Standardised blister foil

✗ White Pack Carton Print¹

Business Case

25% less
time and
effort



✓ Large Efficiency Gains

✓ Flexible and Responsive

✓ Lower write offs
and lower waste

Late Stage Analysis Tools that work



SKU	Brand	Volume	Material	Country
S1	S1	100k	Alu/PVC	USA
S2	S2	50k	Alu/PVC	USA
S3	S3	20k	Alu/PVC	USA
S4	S4	10k	Alu/PVC	USA
S5	S5	5k	Alu/PVC	USA
S6	S6	2k	Alu/PVC	USA
S7	S7	1k	Alu/PVC	USA
S8	S8	500	Alu/PVC	USA
S9	S9	200	Alu/PVC	USA
S10	S10	100	Alu/PVC	USA



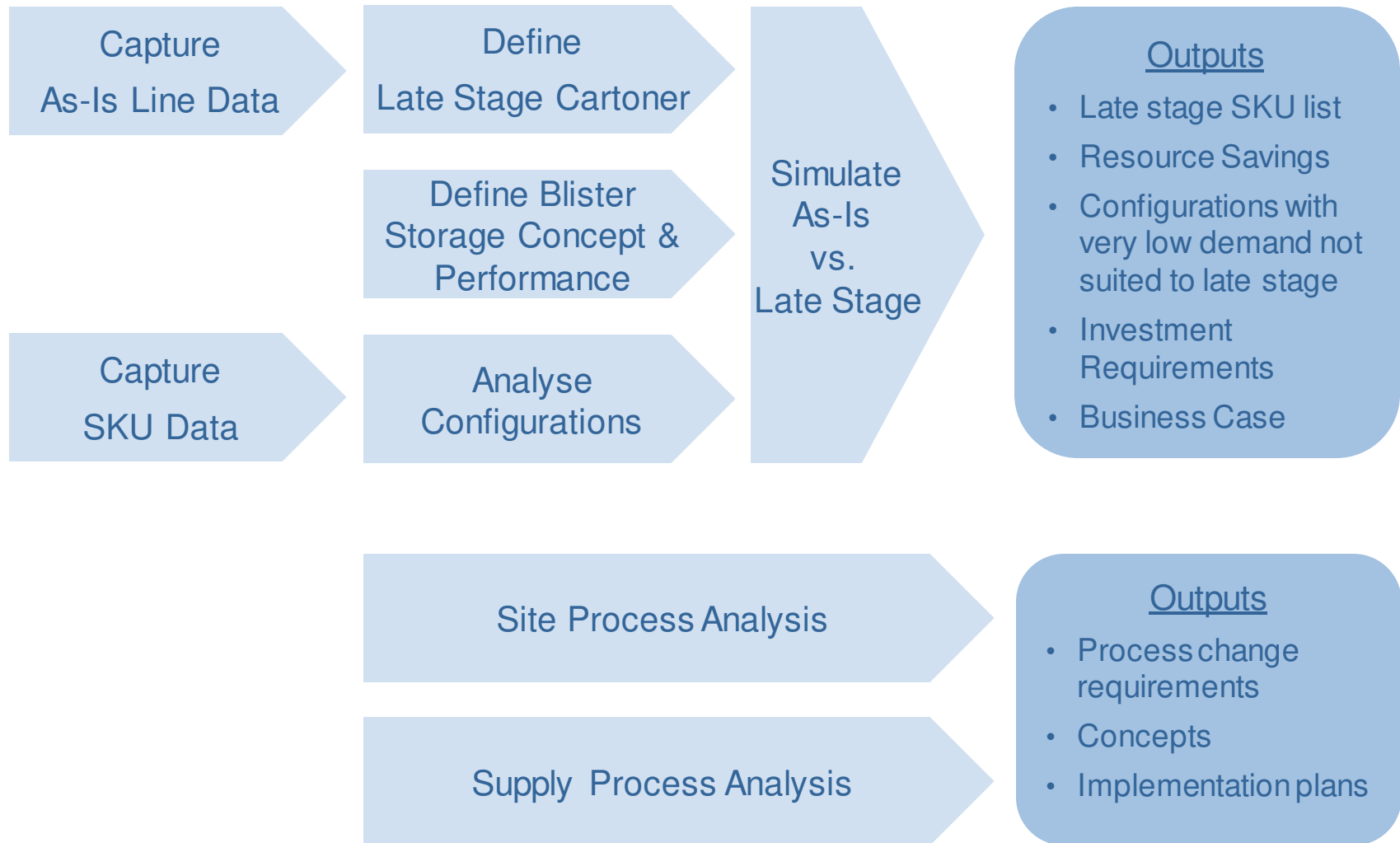
✓ LSC decision tool

✓ Bulk Blister Planner

✓ Hand pack vs automated
by country

1. Not yet a viable option in most cases.

Late Stage Analysis Approach



THANK YOU



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Be4ward is a niche management consultancy with award winning success in delivering pack change and artwork capability

Be4ward provides specialist consulting services to the global pharmaceutical industry.

Our team combines operational management experience, subject matter expertise and excellent consulting skills to help our clients deliver successful change.

Whilst we have in depth knowledge of the supply base in our areas of focus, we provide independent advice to our clients.

Our current areas of focus include:

- Packaging and artwork management.
- Product coding, serialisation and anti-counterfeiting.
- Product complexity management, late customisation and postponement.
- Secondary packaging supply chain design.
- Post merger legal entity and brand integration.

Contact details

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