

Ken Webster



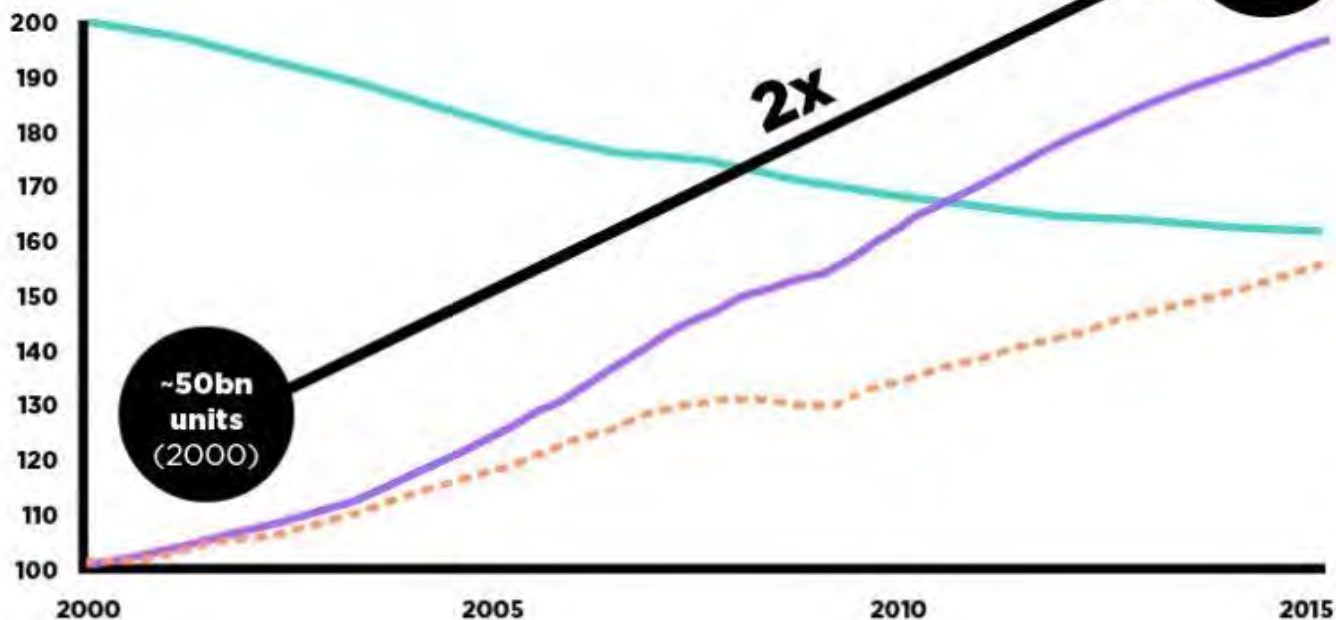
INDEX 100 IN 2000

NUMBER OF TIMES AN ITEM IS WORN¹

--- WORLD GDP

— CLOTHING UTILISATION

— CLOTHING SALES



¹ Average number of times a garment is worn before it ceases to be used
Source: Euromonitor International Apparel & Footwear 2016 Edition (volume sales trends 2005-2015); World Bank, World development indicators - GD (2017)

UR



**A sandwich,
a butterfly
and a cake!**

THE SANDWICH

SYSTEMS THINKING

- SCIENTIFIC WORLDVIEW
- COMPLEX ADAPTIVE SYSTEMS
- HOW WE TEACH AND LEARN



THE SANDWICH

SYSTEMS THINKING

- SCIENTIFIC WORLDVIEW
- COMPLEX ADAPTIVE SYSTEMS
- HOW WE TEACH AND LEARN

PRODUCTION & CONSUMPTION

- CRADLE TO CRADLE
- PRODUCT SERVICE SYSTEMS ETC



THE SANDWICH

SYSTEMS THINKING

- SCIENTIFIC WORLDVIEW
- COMPLEX ADAPTIVE SYSTEMS
- HOW WE TEACH AND LEARN

PRODUCTION & CONSUMPTION

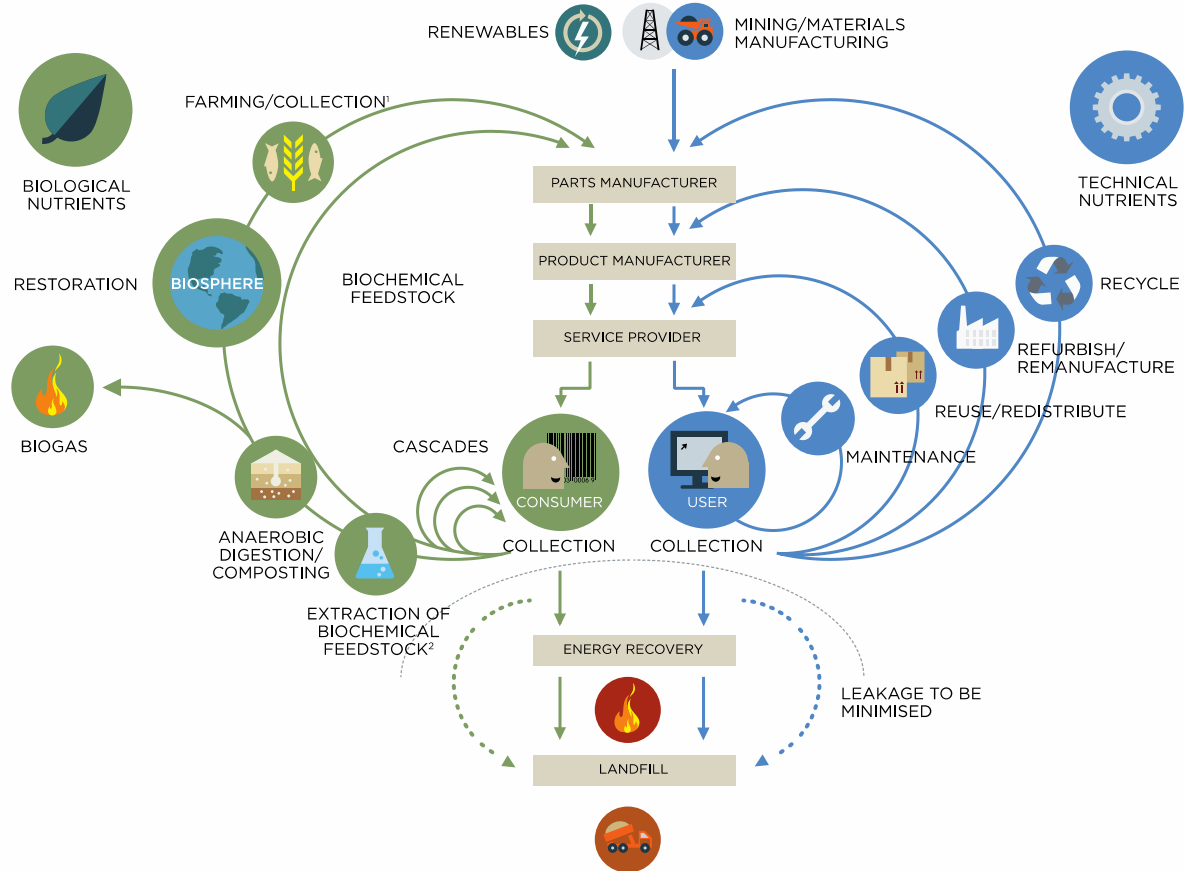
- CRADLE TO CRADLE
- PRODUCT, SERVICE, SYSTEMS ETC

ENABLING CONDITIONS

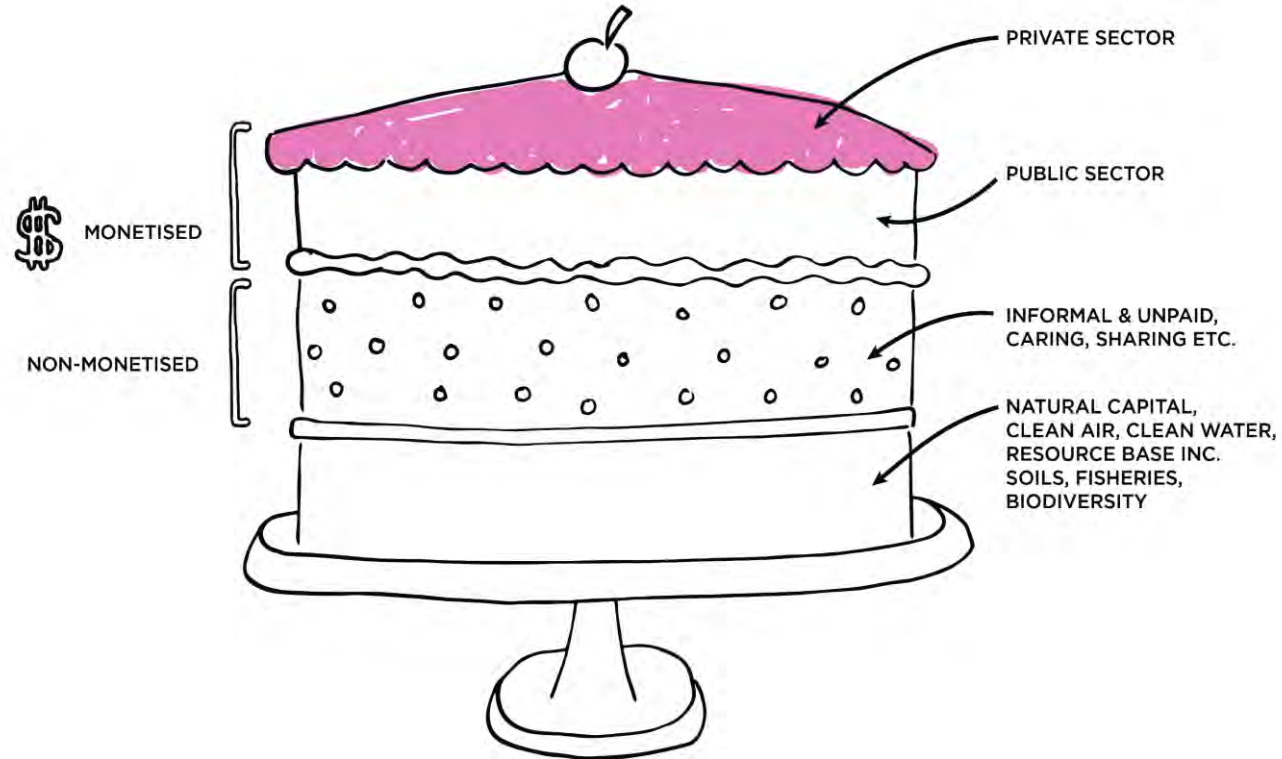
- GOVERNMENT 'RULES OF THE GAME'
 - ICT REVOLUTION ETC
-



CIRCULAR ECONOMY THE BUTTERFLY DIAGRAM



A CAKE



Two
approaches

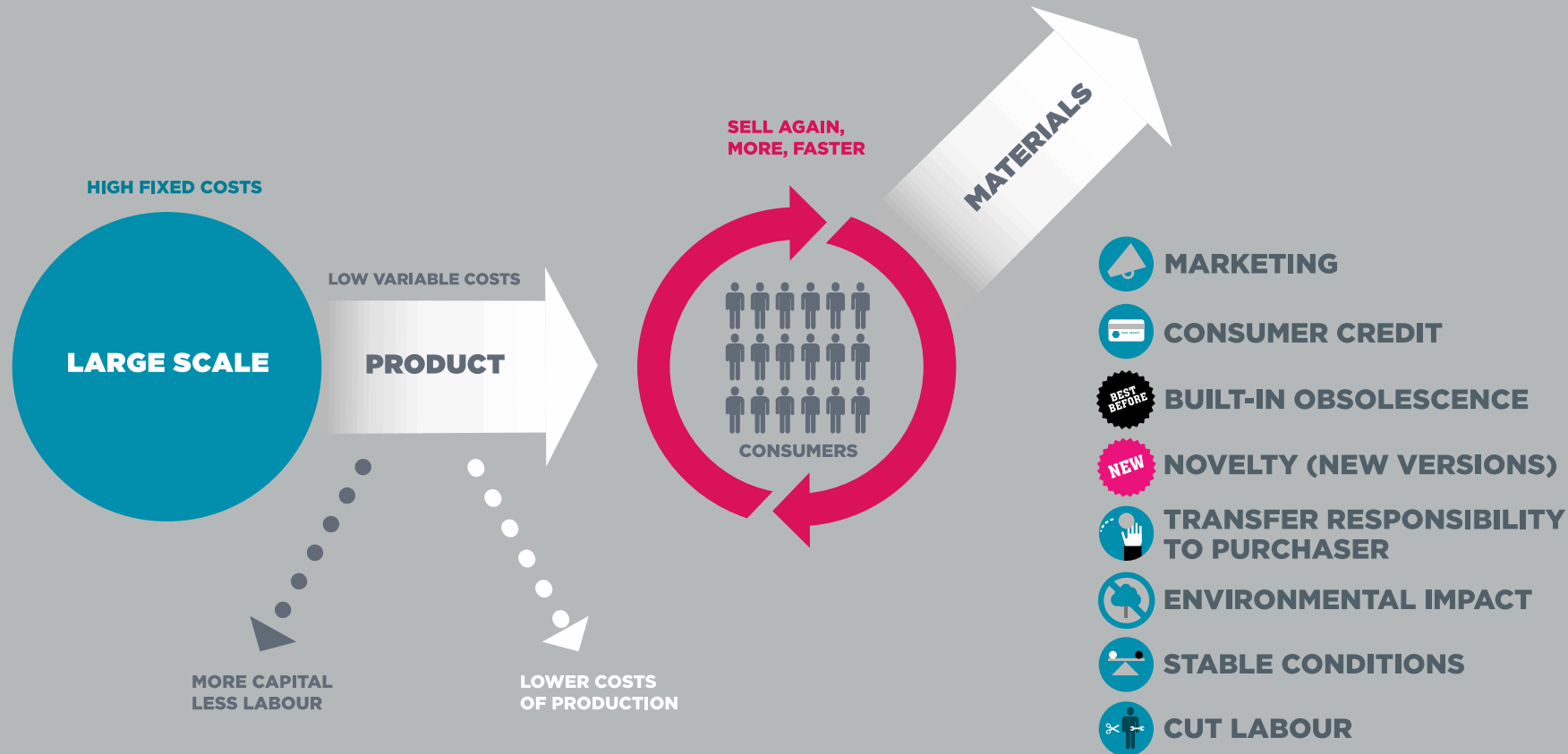
Technosphere

Goods to
services

Biosphere

Cascading:
multiple
benefits and
cash Flows

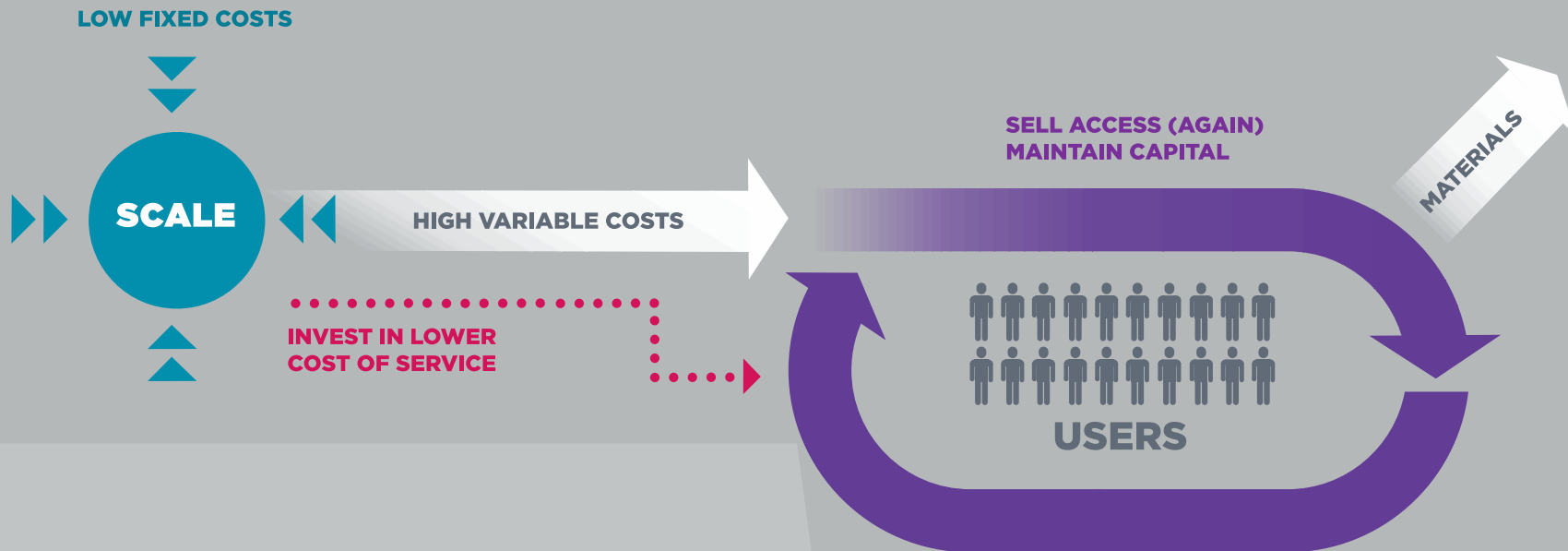


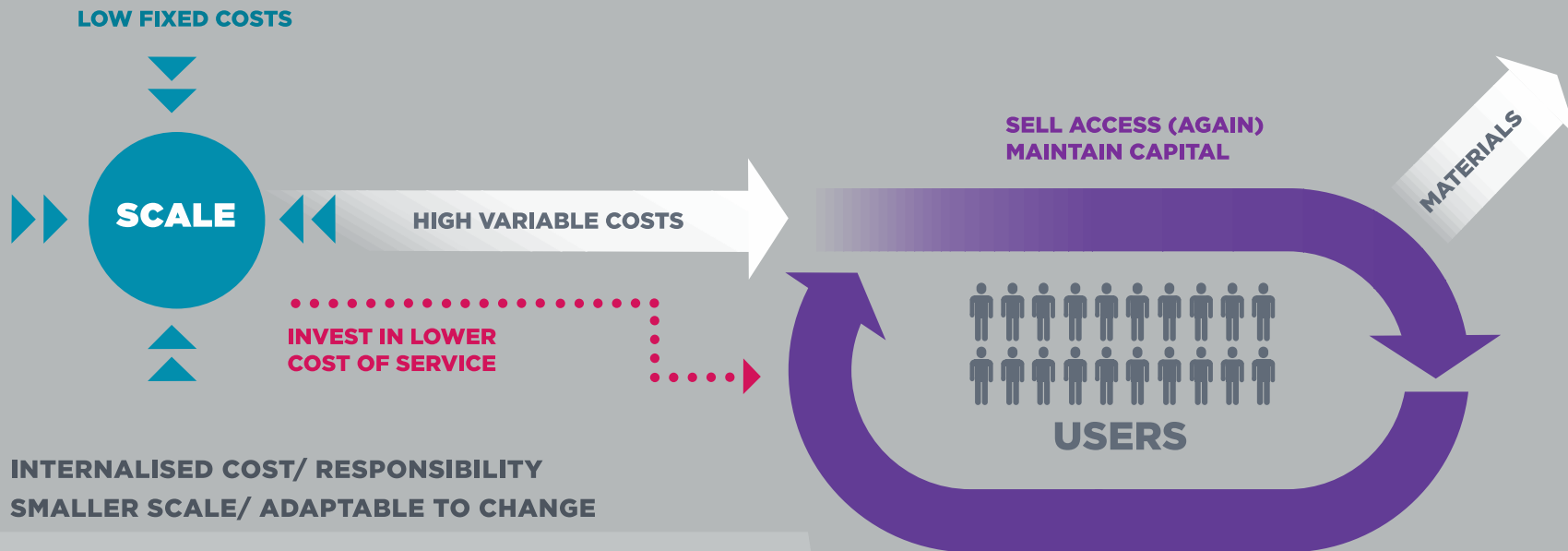


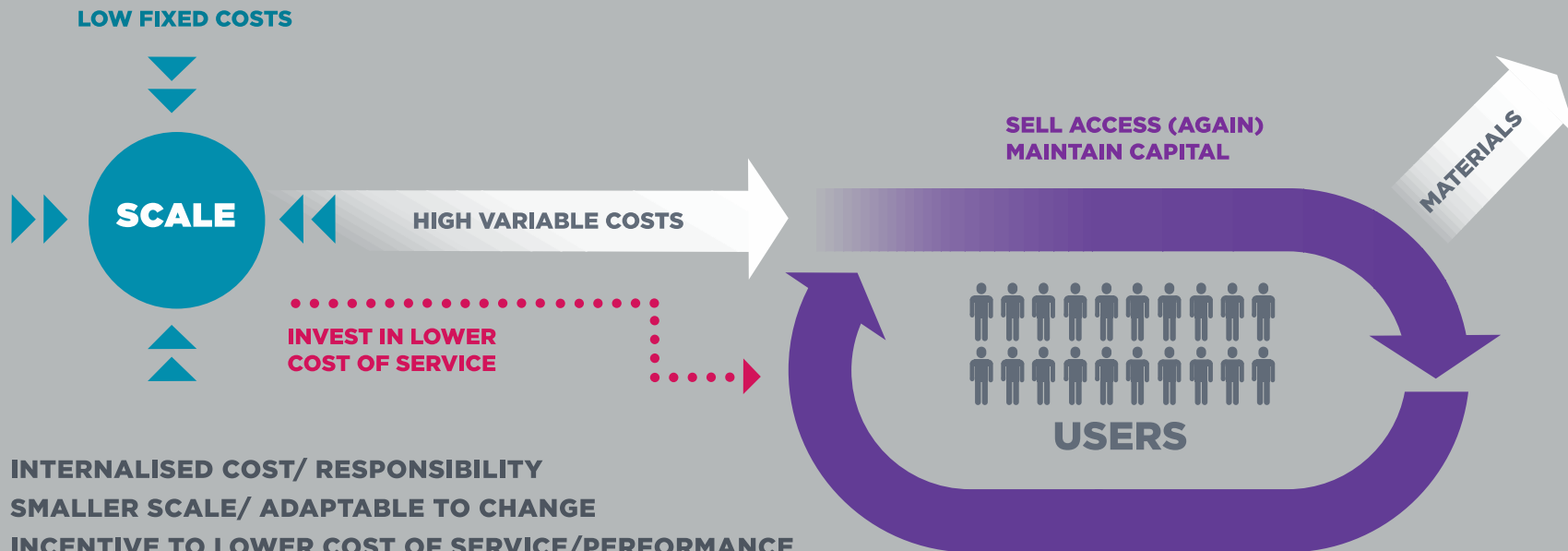
**Revenue means selling more
or *selling* again and again...**

It's the very *scale* and fact of *selling* the goods which does so much to cause the problems.

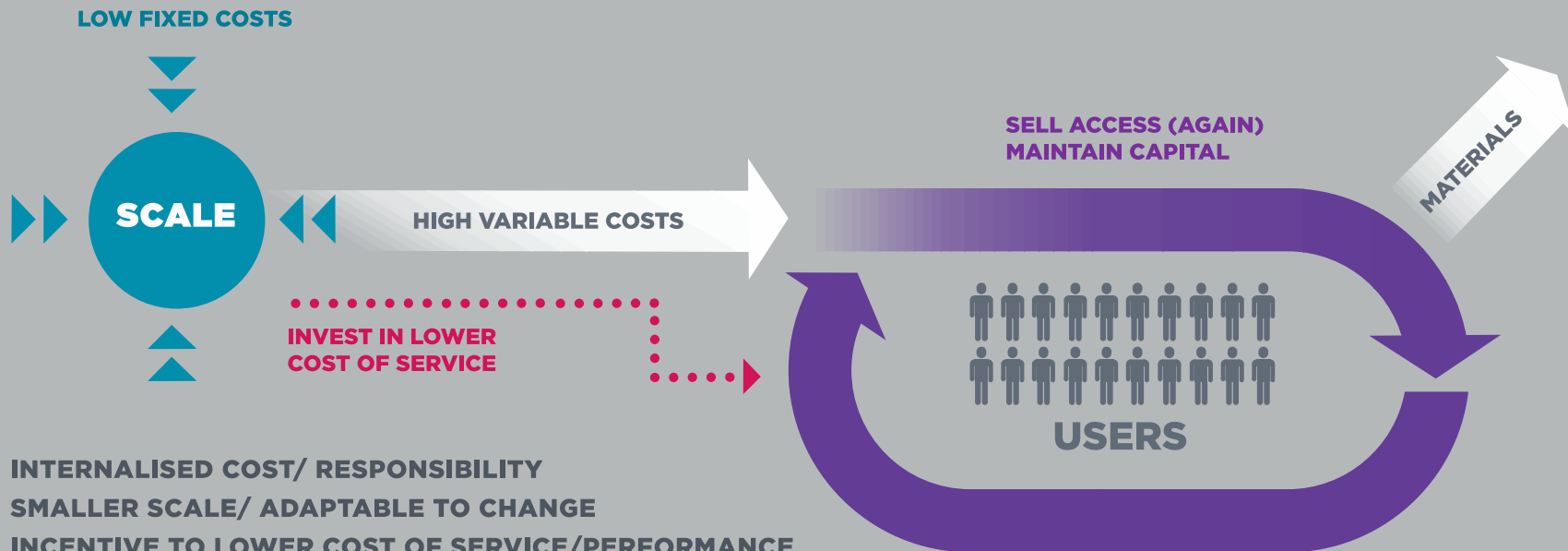
So what if both *scale* and *selling* the goods could be challenged profitably?



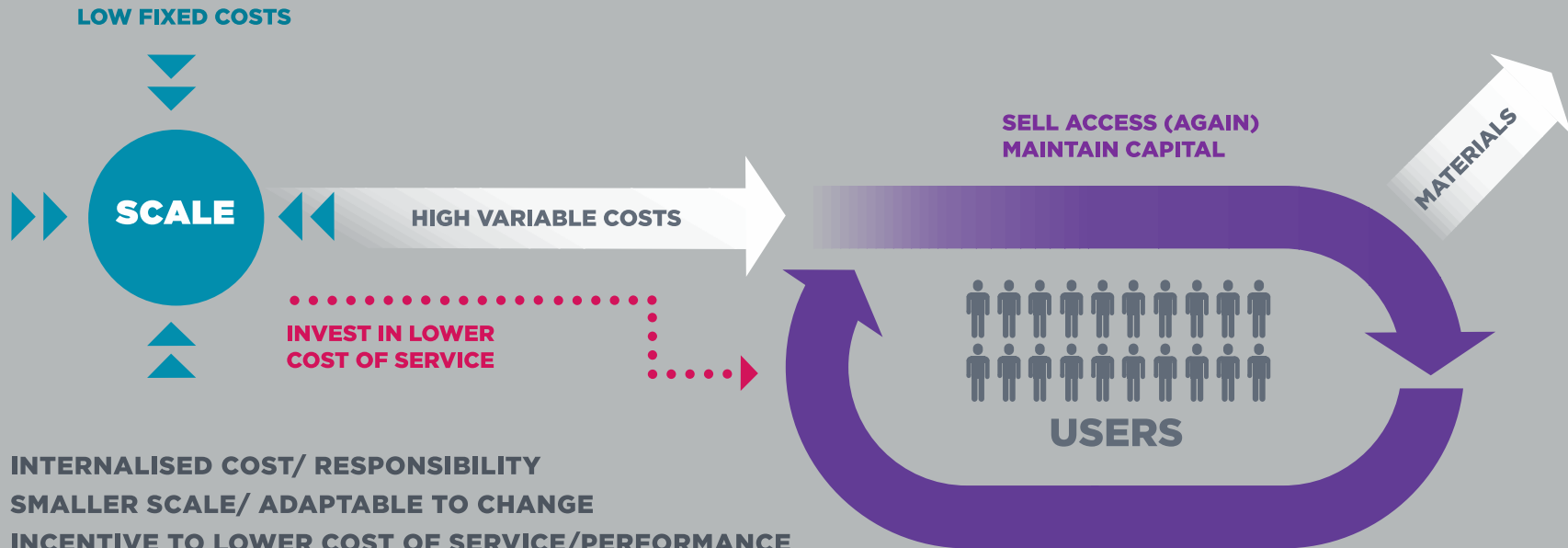




- **INTERNALISED COST/ RESPONSIBILITY**
- **SMALLER SCALE/ ADAPTABLE TO CHANGE**
- **INCENTIVE TO LOWER COST OF SERVICE/PERFORMANCE**
- **USER EXPERIENCE PARAMOUNT**



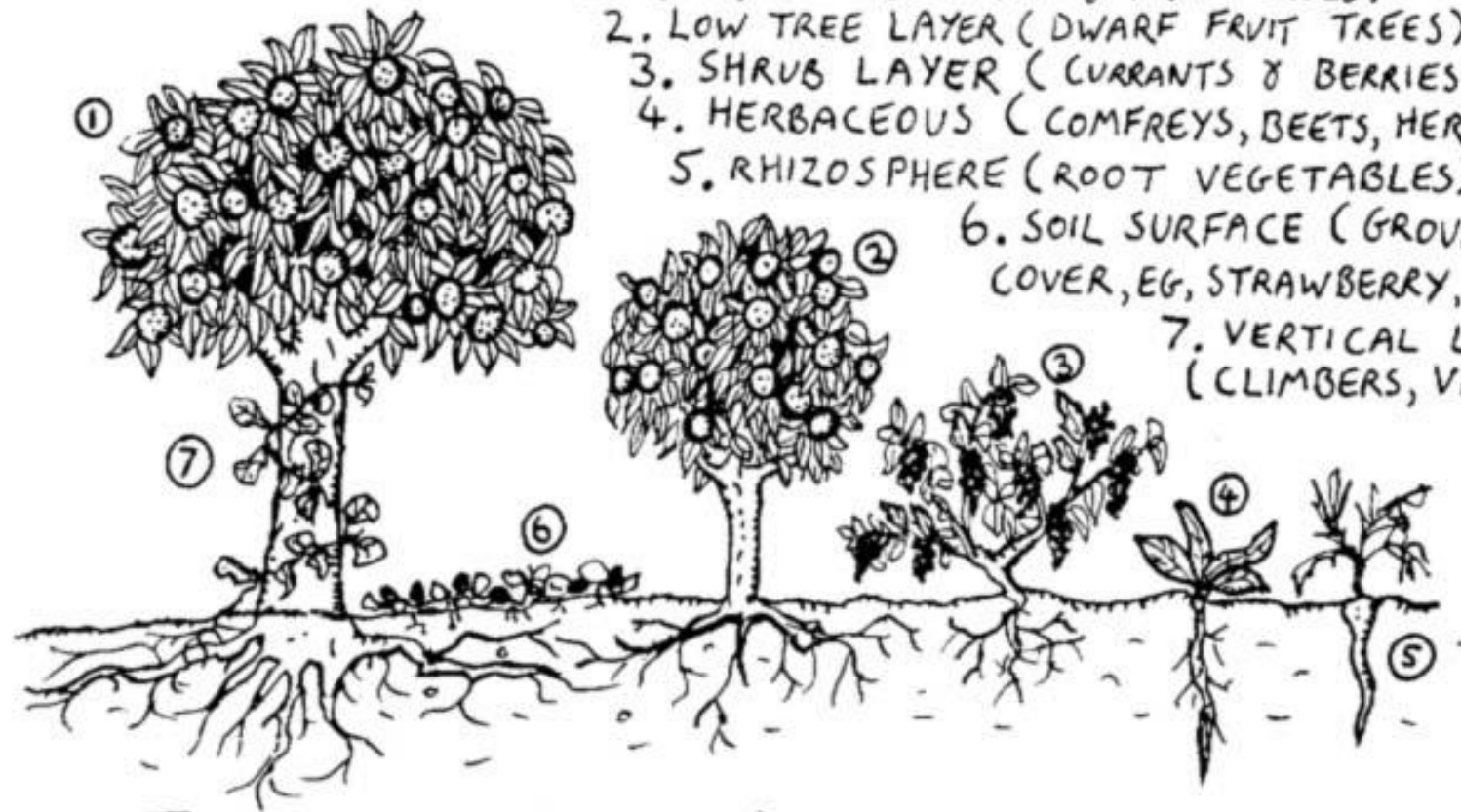
- INTERNALISED COST/ RESPONSIBILITY
- SMALLER SCALE/ ADAPTABLE TO CHANGE
- INCENTIVE TO LOWER COST OF SERVICE/PERFORMANCE
- USER EXPERIENCE PARAMOUNT
- PRODUCT/COMPONENT/MATERIAL SUPPLY RISK REDUCED
- EXTENDED PRODUCT LIFE



- **INTERNALISED COST/ RESPONSIBILITY**
- **SMALLER SCALE/ ADAPTABLE TO CHANGE**
- **INCENTIVE TO LOWER COST OF SERVICE/PERFORMANCE**
- **USER EXPERIENCE PARAMOUNT**
- **PRODUCT/COMPONENT/MATERIAL SUPPLY RISK REDUCED**
- **EXTENDED PRODUCT LIFE**
- **ICT PROVIDES FEEDBACK -USE/MAINTENANCE/ACCESS**
- **COMPONENTS ALSO A PRODUCT OF SERVICE**

**Revenue means selling access
over time and reinvesting in
lowering cost of service**

1. CANOPY (LARGE FRUIT & NUT TREES)
2. LOW TREE LAYER (DWARF FRUIT TREES)
3. SHRUB LAYER (CURRANTS & BERRIES)
4. HERBACEOUS (COMFREYS, BEETS, HERBS)
5. RHIZOSPHERE (ROOT VEGETABLES)
6. SOIL SURFACE (GROUND COVER, EG, STRAWBERRY, ETC)
7. VERTICAL LAYER (CLIMBERS, VINES)



THE FOREST GARDEN: A SEVEN LEVEL BENEFICIAL GUILD

Drink

Eat

Feed

Wear

Walk

Insulate

Paint

Store



Coffee

Mushroom

Animal

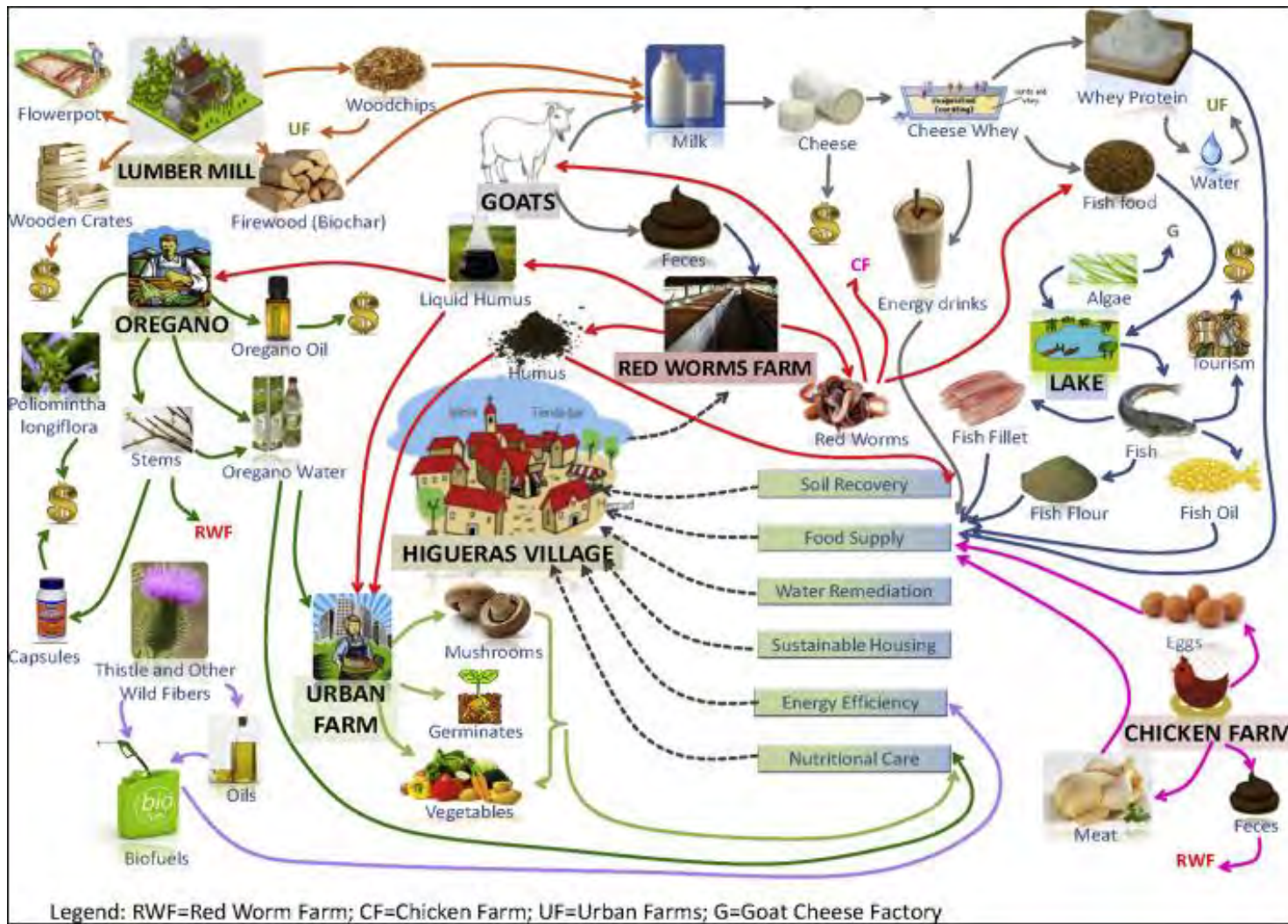
Textiles

Carpets

Fridges

Color

Energy



“Generate more value for all through multiple cash flows and benefits – cascading nutrients, matter and energy”

Gunter Pauli

Diagram Carlos Scheele