



A breakthrough in “Aseptic Spouted Pouches” (ASP)



Chicago, October 27, 2009

Speaker - **Giulio Ghisolfi**

TOPICS

The Challenge

Critical issues of present *Aseptic Spouted Pouch* technology
Examples of existing Spouted Pouches (no aseptic)
Examples of existing Spoutless Pouches

The Creative Approach

ASP - From spout to a new aseptic reclosable pouch concept
ASP - Target products
ASP - Advantages

The industrial challenge

The approach (FFS vs FS)
ASP process-flow
ASP project development timeline
ASP performances

Conclusion

The Vision

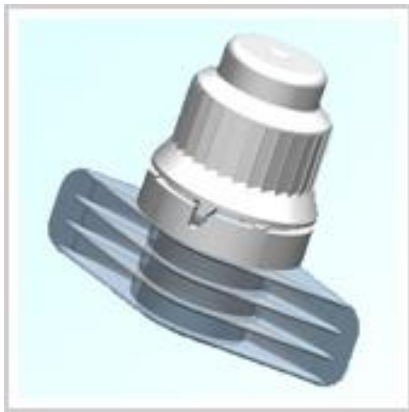


A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH



THE CHALLENGE

How to apply a Spout to an Aseptic Pouch?



+



?

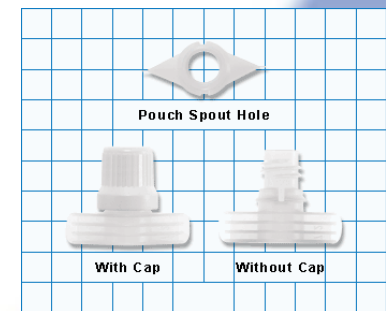


CRITICAL ISSUES

Aseptic spouted pouch (ASP) is one of the latest development in Packaging Worldwide there are very few installed FFS horizontal/vertical lines able to provide a reliable **Aseptic Spouted Pouch** (ASP) output.

WHY?

- ▶ Spout is difficult to be perfectly sterilised
- ▶ Sealing spout problems may occur during filling stage
- ▶ Existing FFS process are difficult to keep perfectly decontaminated
- ▶ Low productivity output (less than 100 pcs x min.)
- ▶ High set-up costs and waste percentage, long set-up time
- ▶ Difficult in-line controls



Examples of SPOUTED POUCH*



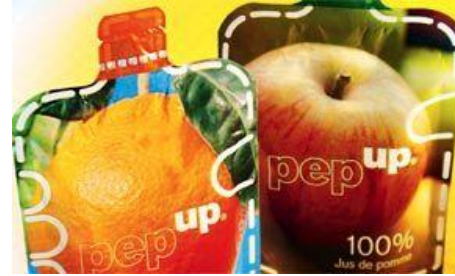
* Not Aseptic processed (Hot-filling/pastorised/sterilised processed)



A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH



Examples of SPOUTLESS POUCH

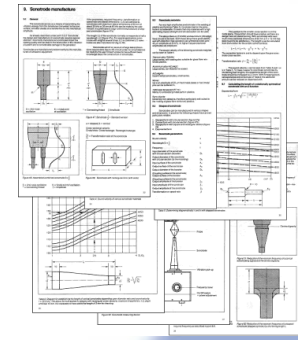
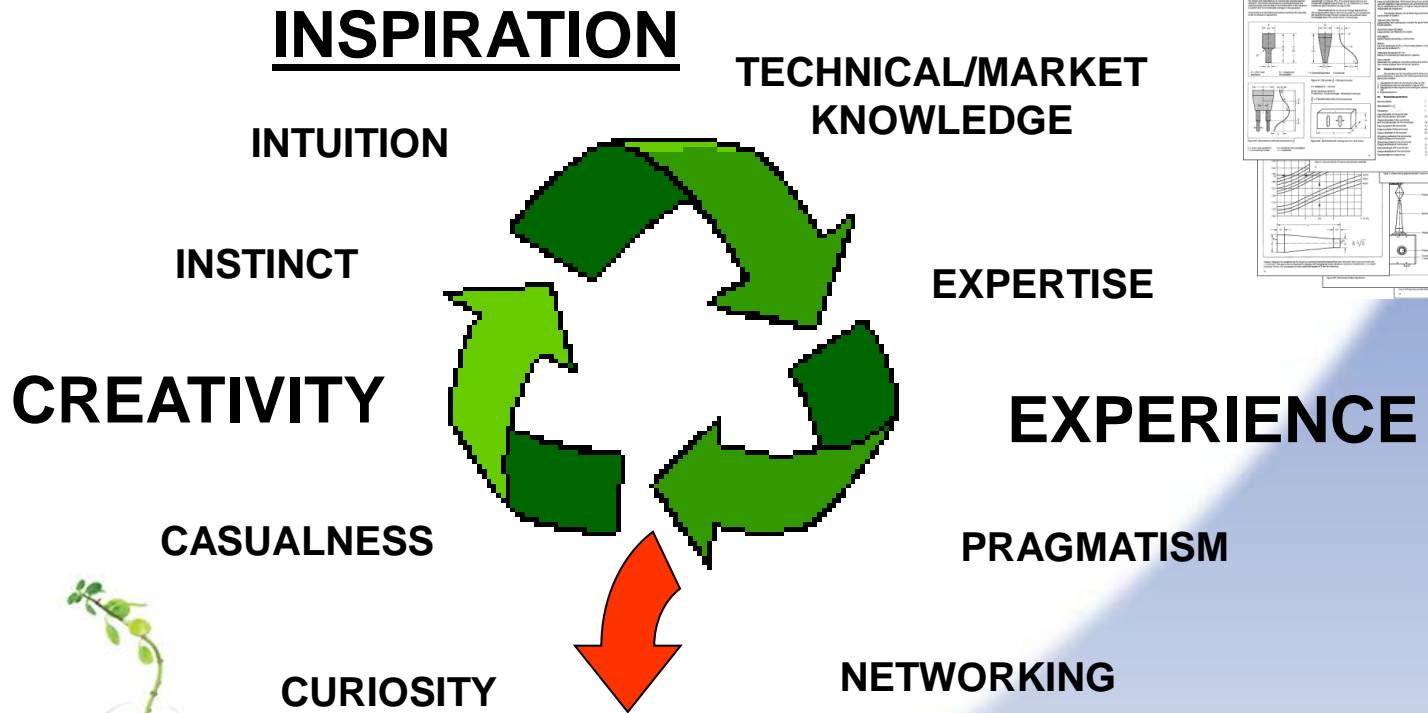


* Ecolean (aseptic pouch)

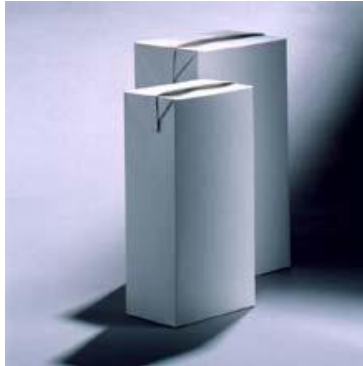


A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH

THE CREATIVE APPROACH



INSPIRATION



StreamCap (1997)*

* Registered TRADE MARK by Tetrapak



A BREAKTHROUGH IN ASEPTIC SPOUDED POUCH



THE SOLUTION

- ✓ Create a new Piercing Spout
- ✓ Simplify the process, reduce contamination
- ✓ Modify the pouch shape to easy apply the spout

MARKET CONSTRAINTS

- Mantain the same way of opening (the gesture)
- Maximum flexibility and adaptability (size, volume, shape)
- High efficiency and productivity
- Low costs (unit cost and cost of the system)

ASP (pat-pending)



ASP (pat-pending)



Perforation

Just one movement

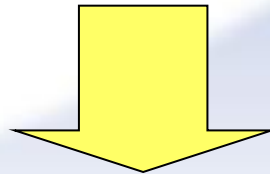


A BREAKTHROUGH IN ASEPTIC SPOUDED POUCH

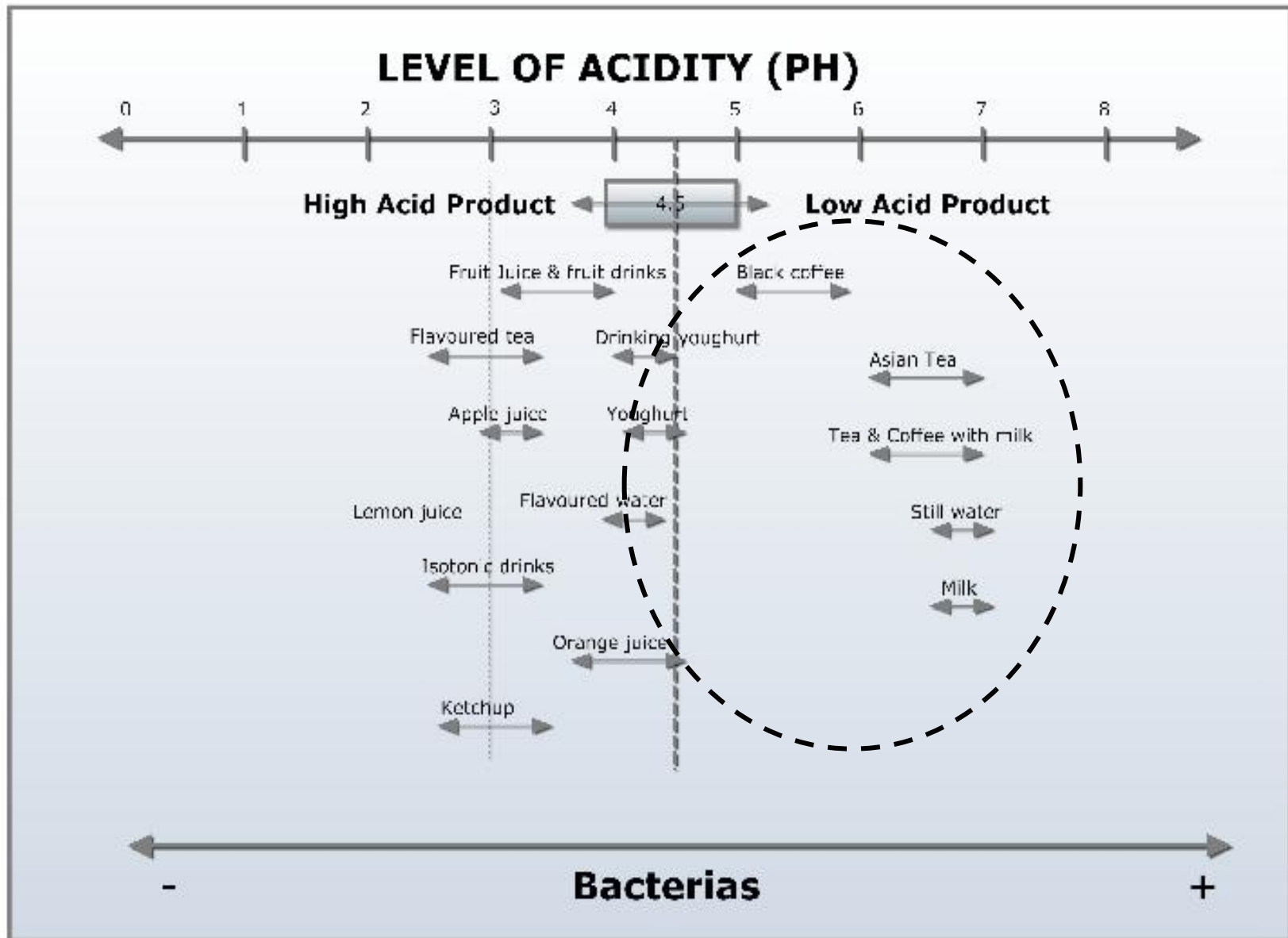


ASP – TARGET PRODUCTS

- Small size packs – from 50 to 330 ml volume
- On-the-go products – Kids drinks
- Organic products (“Natural” taste) - 100% fruit/vegetables
- Functional drinks - containing prebiotic, vitamins ect..
- Sterilised products (e.g. clinical nutrition)
- Existing products processed with ultra-clean technology
- **Low-acid products with PH > 4.5 (see the following list)**



ASP – TARGET PRODUCTS / 2



----- Target market ASP

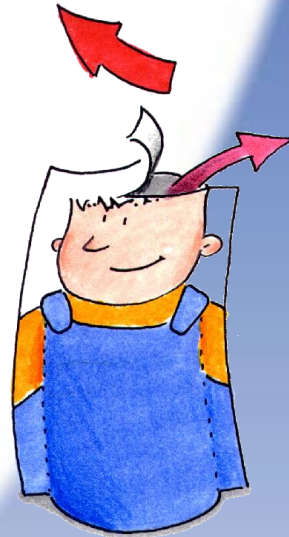
CONSUMER ADVANTAGES

No changes in use - The same as today

Easy Opening & Reclosing - Max usability

Great handiness, durability, easy disposal – On the go pack

Highest quality - NO break , NO spill

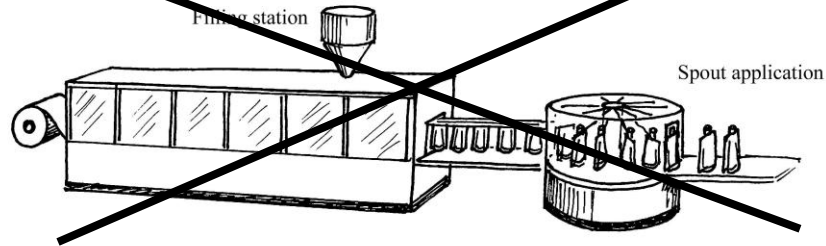


A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH



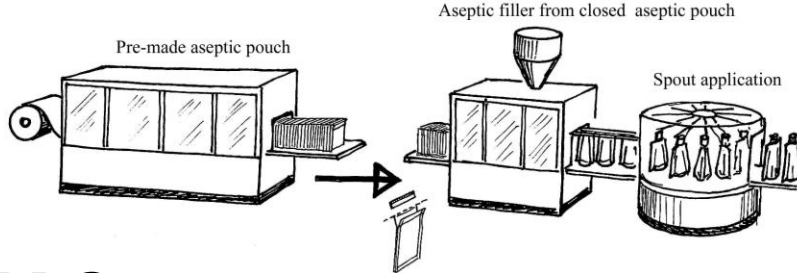
THE INDUSTRIAL APPROACH

~~Aseptic Horizontal FFS with in-line application of the spout on filled pouches~~



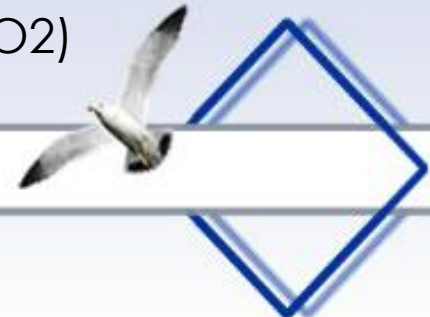
Vs

Aseptic horizontal FS pre-made pouch



PROs

- Production efficiency (higher speed and low set-up)
- Very compact machine size
- Flexibility/adaptability (size, volume and shape of pouches)
- Easier in-line & out-line controls
- Sterilisation systems (Gamma ray exposure, ebeam, H2O2)



THE INDUSTRIAL CHALLENGE

**The manufacturing process of a
sequential
High-speed aseptic pouch
packing line with...**



A BREAKTHROUGH IN ASEPTIC SPOUDED POUCH



THE INDUSTRIAL CHALLENGE

**...New Pouch Forming, Filling and Spouting LINE
consisting of:**

- 1- Pouch Forming** from reel stock (at 300 ppm)
- 2- Aseptic Pouch Filling**, from pre-made pouch in reel form,
(at 250 ppm)
- 3- Spout Applicator Machine** (at 250 ppm)



A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH



THE INDUSTRIAL CHALLENGE

To date most advanced technologies

- **Mechanicals** - Synchro-combined, intermittent and continuous motion machine cycling
- **Film and Equipment sterilization** - Gamma ray exposure + ebeam+ H₂O₂



A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH

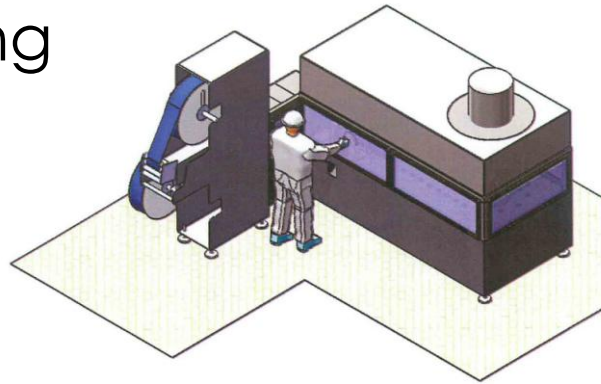


ASP - Process Flow

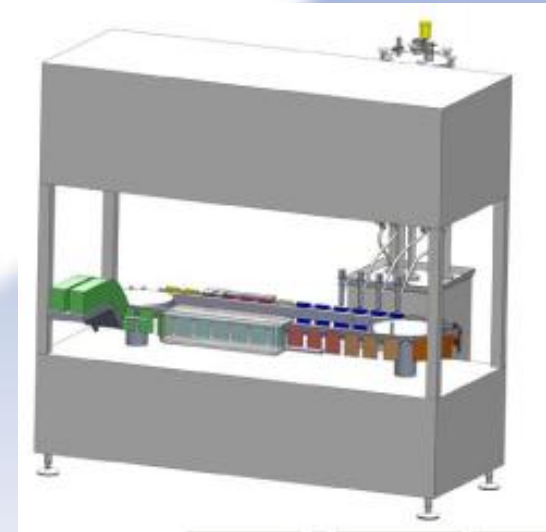
1- Presterilised "ready-made pouch"



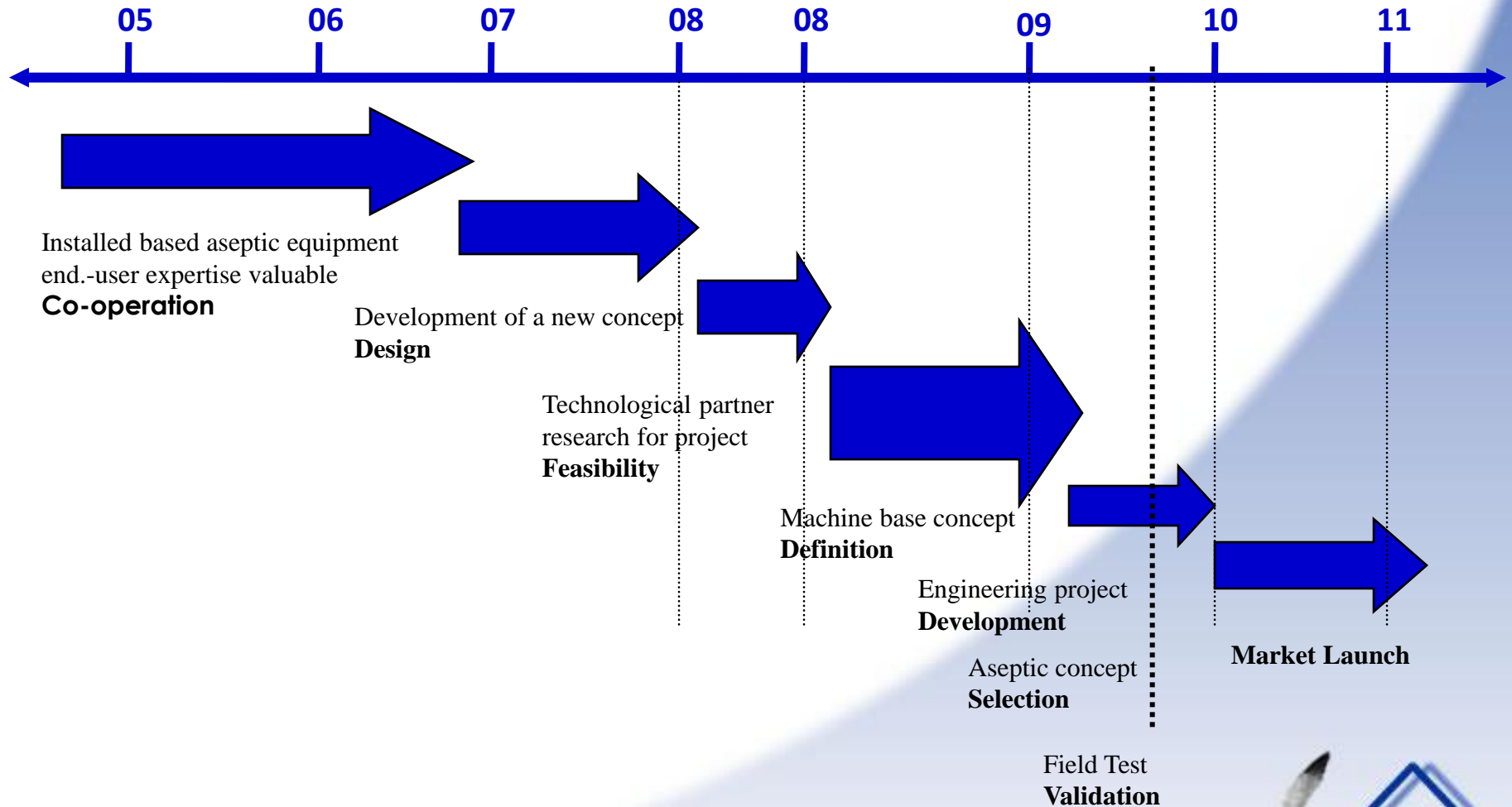
2 - Aseptic Filling



3- Out-line Spout Applicator



ASP- Project development timeline



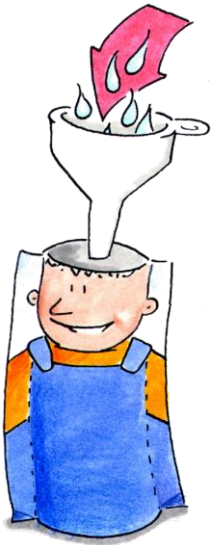
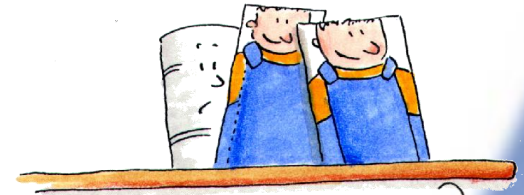
ASP Performances

Any low acid product – with PH > 4.5

Longer product shelf-life - One year at room conditions

Completely safe process – Zero contamination

High productivity > 250 pcs x min.



THE VISION

“I’m not afraid to start from the beginning”

“Creativity is just connecting things”

“THINK DIFFERENT”

“People don’t know what they want until you show it to them”

“Innovation has nothing to do with how many R&D dollars you have”

Vickypack

A BREAKTHROUGH IN ASEPTIC SPOUTED POUCH

“Inside Steve’s Brain”
by Leander Kahney