SANOFI PASTEUR’S 10 COUNT SYRINGE CARTON FOR FLU VACCINE BECOMES WORLDSTAR WINNER

BACKGROUND
Flu vaccines are a high volume commodity product, in which price, availability, and Time-to-Market are key factors for success. The entire production for the flu season takes place within a 3-4 month period. Production occurs on 24/7 basis. In addition, vaccines are shipped and stored in a cold-chain. This requires cold storage within the facility and the warehouses in the distribution channel. Refrigerated trucks are also required for intermediate transport. Dispensing pharmacies and clinics must also store the vaccine in a refrigerator. Furthermore, the entire flu vaccine industry is moving away from multiple doses, typically 10 per vial, to single pre-dose syringes. This means there is a need to package 10 times the number of syringes than vials in the same timeframe. Taken together, there is a need to package 10 times the number of syringes than vials in the same timeframe.

INNOVATION
Creative Application: Major benefits were obtained by replacing pre-made plastic trays & lid material with a 100% paperboard material, consisting of a carton and partition.

Technical Advances: Most compact 10 count flu-vaccine syringe package on the market. Design Advances: Two layers of 5 syringes are cradled in a paperboard nest. There is no glass-to-glass contact, thus protection required:

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- The new package is based on a top-load design. The top lid is opened by depressing a tamper-evident tab in the front of the carton. Note: The previous design was a slide-load carton that required a semi-re-closeable (reverse tuck).
- Machine Performance: Sanofi Pasteur invested in a Dividella NeoTOP 804 cartoner with the capability of packaging up to 800 syringes per minute. In addition to the syringes, syringe labeling machines with printing and OCV, as well as buffers and merging units to ensure high uptime resulting from minor disturbances and imbalances. An automatic case packer from PRB was integrated at the end of the Dividella NT804 machine.

ECONOMICS
Material Cost Savings: The elimination of the pre-made blister trays & lid material, and 1 booklet, saved over 33 cents per pack. Cold-Chain Storage & Distribution Savings: The reduction in package volume by ~50% cut the number of refrigerated trucks and internal cold-chain storage burden in half. Investment in additional cold-storage capacity was eliminated.

In-Bound Freight Savings: The carton and partition for the new pack arrives as flat blanks. Much smaller than receiving pre-made plastic trays. Combined savings for the above changes are greater than a million dollars annually.

PERFORMANCE
Package Opening: The new package is based on a top-load design. The top lid is opened by depressing a tamper-evident tab in the front of the carton. Note: The previous design was a slide-load carton that required a semi-re-closeable (reverse tuck).

Machine Performance: Sanofi Pasteur invested in a Dividella NeoTOP 804 cartoner with the capability of packaging up to 800 syringes per minute. In addition to the syringes, the machine was configured with the flexibility to package vials, needles, and combination packs. Integrated force sensors within the syringe placement station prevent damage during the loading process. Verification of the syringes and booklet within the carton after each loading operations is achieved with vision technology (Cognex). This functionality eliminated the need for a check-weigher on the line. The Overall Equipment Efficiency of the cartoner is greater than 70%. This is up from 33% with the previous packaging system.

INTEGRATION: The packaging line included upstream machines from Groninger for inserting the plungers into the syringes, syringe labeling machines with printing and OCV, as well as buffers and merging units to ensure high uptime resulting from minor disturbances and imbalances. An automatic case packer from PRB was integrated at the end of the Dividella NT804 machine.

BENEFITS TO END-USERS: The blister and syringes are completely visible to the person performing the dosing of the vaccines, allowing instant recognition if the contents have been compromised. The cartons are typically stored in a small refrigerator within the pharmacy or clinic. Because the volume is over 50% less, the customer is able to store 50% more product in their refrigerators.

MARKETING
Key to the marketing process is minimizing the package size since practitioners have only limited refrigerated space available in their offices. The reduced package size helped conserve this space for health care providers and allowed them to stock more product than would otherwise have been physically possible.

ENVIRONMENTAL IMPACT
The 100% paperboard NeoTOP carton is completely recyclable, compared to the former plastic trays with Tyvek lid stock. As such, the disposal costs are lower and the sustainability is much higher.

CASE STUDY
SAVE ON TOTAL COST OF PACKAGE
the customer’s requirement

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the solution

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CUSTOMER BENEFITS

The top-load carton is made from 100% recyclable paperboard material, and eliminated pre-made plastic trays and lid material, resulting in a savings in excess of $1,000,000 annually. A reduction in pack volume of 50% cut the expensive cold-chain shipping and storage costs in half. The NeoTOP 804 syringe cartoning system from Dividella provided four times the throughput of the previous system, with a capacity of 800 syringes per minute. The Overall Equipment Efficiency (OEE) doubled from 35% to over 70%.

AWARD

Sanofi Pasteur’s syringe carton, awarded with the AmeriStar in summer 2013, won another important packaging prize: the WorldStar Award 2014.

Since 1970, the World Packaging Organisation (WPO) has given awards in seven categories to numerous new packs from all around the world. In November 2013, Dividella won the title “WorldStar” in the category “Pharmaceutical & Medical”. Representatives of 24 packaging associations, all members of WPO, judged 249 packaging projects, from 35 countries, for application for WorldStar Awards 2014. In total, 139 projects were awarded the title “WorldStar”.

WorldStars are presented only to those packages having already won recognition in national or regional competitions. Dividella’s syringe carton has been awarded the AmeriStar 2013 (category “Drug & Pharmaceutical”) from the Institute of Packaging Professional in June.

left to right:
Michael DeCollibus, president Körber Medipak Systems NA
Charles Listigovers, Senior Director, Global Technology Innovation, Sanofi Pasteur
Stefan Knellwolf, CEO Dividella AG, Christoph Hammer, CTO Dividella AG
Ernie Bancroft, Körber Medipak Systems NA

www.dividella.ch

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technical data

NeoTOP 804

Modular and extendable packaging system for the production of large lots.

Format range:

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
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<tr>
<td>95 x 45 x 17</td>
<td>240 x 170 x 70</td>
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No. of partitions: 4

Output packs/min.: 80

The modular concept allows the machine to expand at any time. (For example, integration of another product inserter or a manual inserting module, etc.) The NeoTOP concept is adaptable to accommodating extreme product changes and complex pack arrangements.

In addition to the Award Winning 10-count Syringe format, Sanofi Pasteur is also running other formats on the same machine:

- 2x5 Syringes (award pack)
- 1x5 Syringes – 5 Vials + 5 Syringes – 5 Vials + 5 Vials

AWARD