



MICHALT Technology: Innovative Reuse Packaging System

THE PRESENTATION

created 2023 by MICHALT
www.michalt.at



The problem: Billions of Plastic Packaging Waste ..

... comes into landscape and seas



... gets into landfill



... are burned with serious side effects



... are elaborate & costly recycled



The Solution: The MICHALT-Reusable Packaging System by Milan Michalko

This is the wonderful story about an Slovakian inventor, who was inspired by the idea, to reduce the unbelievable amount of packaging-waste dramatically, that is thrown away, taken to landfills, burned or elaborately recycled. He came to Austria, because he found there lots of understanding, support and interest for such an innovative, sustainable and CO2-reducing project.

His idea is to design round Oneway-Packagings like bottles, containers and buckets in a new way, that they will be covered so perfectly with a foil inside as outside, so that they are after use or emptying ready for new refillings - for refillings on and on.

This worldwide patented Reusable Packaging System works with liquid, creamy, pasty, grainy, sandy filling and is therefore suitable for branches and industries like food, beverage, cosmetics, household items, chemistry, pharma-products, agriculture, building materials and much more etc.

Besides all ecological advantages he was heading for a remarkable cost-saving for producers, users and consumers

Presentation Preview

- 1. The patented technology**
- 2. The benefits**
- 3. The cost-saving potentials**
- 4. The offer of MICHALT**
- 5. Working/cooperation with MICHALT**
- 6. Summary**

1. The patented technology

THE PACKAGING

The new packaging consists of a packaging body, which is made out of recycled plastic and a foil, which covers the packaging body completely inside and outside in one piece. The covering foil protects the packaging body from getting dirty or injured, it is very thin but also very strong and safe. You can equip it with a chip for garbage collection systems.

THE FOIL MACHINE

The foil- or film-repacking machine is able to foil the packaging body before the filling with contents. After use/emptying it is able to refoil the packaging body. This procedure could be repeated as long as the packaging body is not injured or destroyed. We estimate and also have tested it, that one packaging body could be refoiled and refilled for 20 up to 50 times, that means that this kind of reusable packaging could last three up to five years. It saves water, energy and cleaning treatments, that would be necessary in case of reusing the packaging body without foils. The client can choose between different kinds of foil-repacking machines, between in house or outsource solutions.

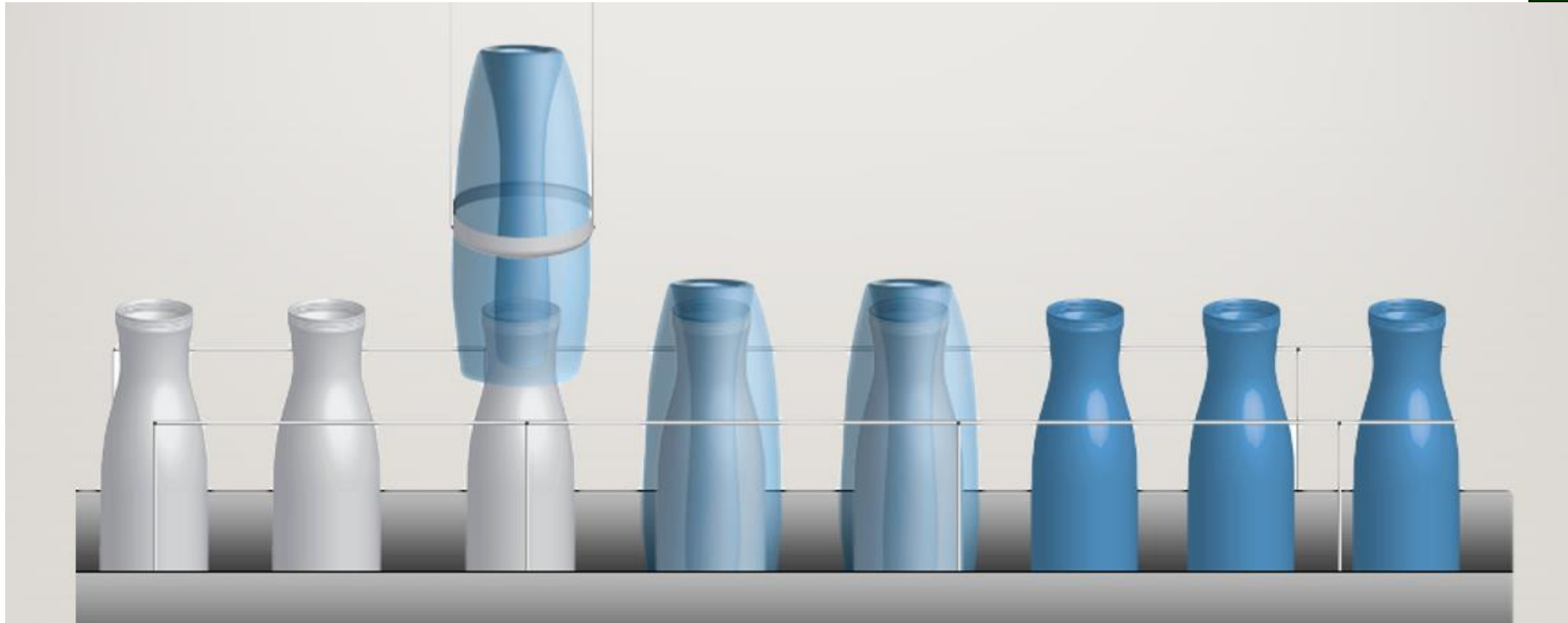
FUNCTIONALITY

Was checked and proven by Dr. Tacker FH Campus Wien. Since the first developments, tests and communication of MICHALT the industries, contents packaging brands and packaging-experts reacted with massive interest. There is a first simple but functional demonstration- and testmachine in Herzogenburg.

THE PATENT

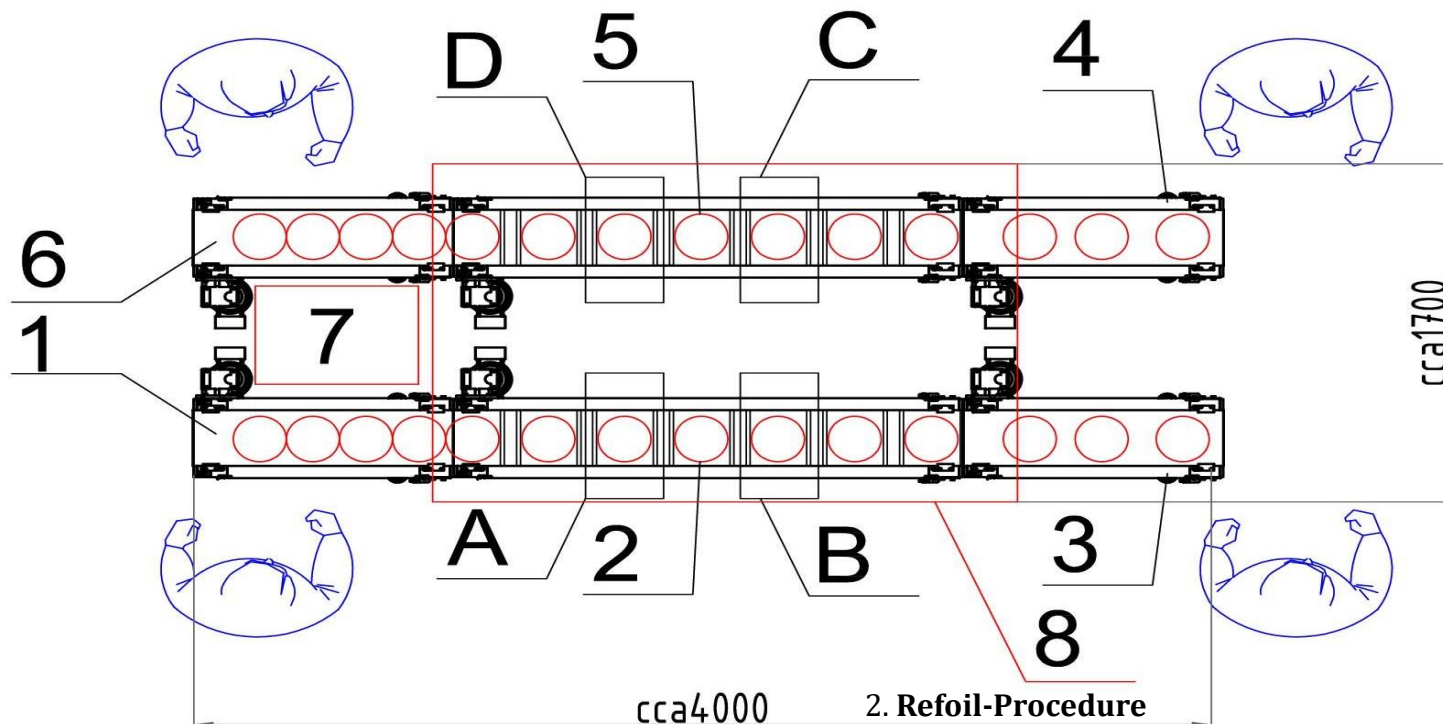
AT 523831 A4 2021-12-15 - Austrian Patentapplication for „Mehrwegverpackung und Vorrichtung zur Umhüllung oder Enthüllung eines Grundkörpers oder eines Verschlusses einer Mehrwegverpackung“

Der technical foil implementation



The Foil is implemented or shrunk on the packaging body with the help of airpressure and warmth. The implemented/shrunk foil covers the packaging body inside as outside so perfectly, that it is after use/emptying ready for new foiling and refillings. To unwrapp the foil or take off the foil from the used packaging body needs the same airpressure- and warmth-support. The one piece-foil could be printed in a quality, that does not differ to usual packaging-prints. The foil-surface in and on the packaging body is so perfect, that it is nearly impossible to notice it.

Sketch & Picture of the „Foil-Repacking-Machine“ of Michalt patented Reuseable Packging- Technology-System



1. Foil-Implementation/Shrunk-Procedure

- Pos..1 Verladen der Produkte nacheinander auf das Förderband + Service
- Pos.2 2 Übergabe der Produkte an das Bandförderband- Mechanismus zum Aufziehen von Folien an Produkt /Abschnitt A/
- Mechanismus zum Schrumpfen der Eimeroberfläche /Abschnitt B/
- Übergabe an das Entnahmeband /3/ - manuelle Entnahme

2. Refoil-Procedure

- Pos.4 Laden von Produkten auf das Förderband
- Pos.5 Übergabe mit einem Bandförderer
- Mechanismus zum Ausblasen des Inneren der Verpackung /Abschnitt C/
- Mechanismus zum Entfolierung durch Ausblasen /Abschnitt D/Kontrollen und Sicherheitsmerkmalemechanizmus
- Pos.7 Leitsystem Siemens oder B@R. Schaltpanell
- Pos.8 Sicherheitselemente - Abdeckung und Behandlung mit Sicherheitsschaltern

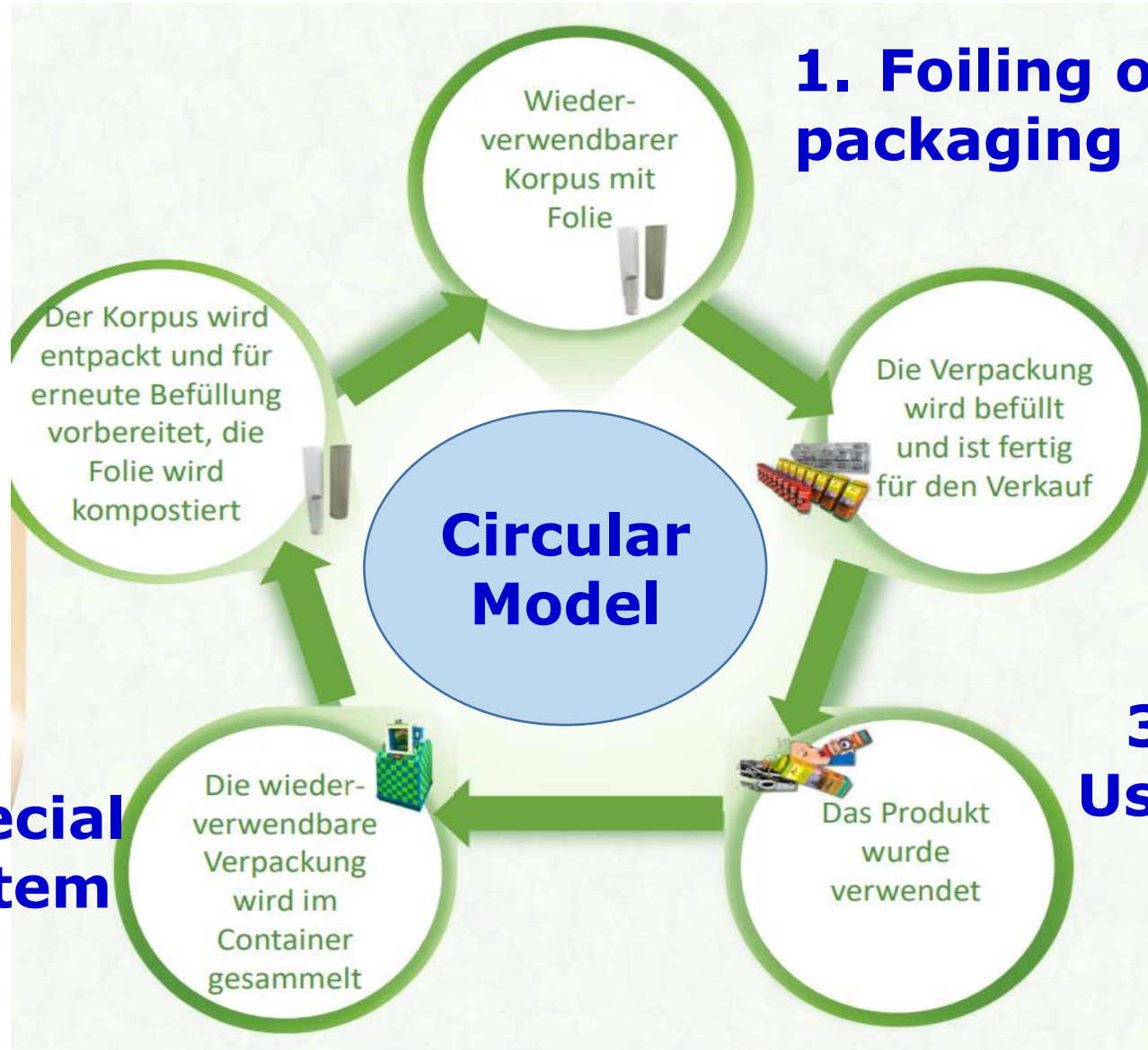


First simple but functional demonstration- and testmachine in Herzogenburg

5 Steps of MICHALT Reuse-System

5. Unwrapping the used packaging; used foil can be recycled

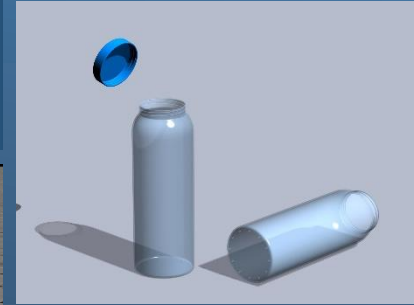
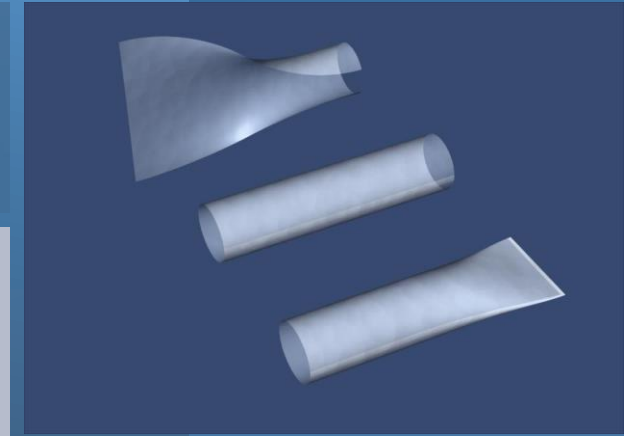
4. Used packaging: special collection-system



1. Foiling of the packaging body

2. Contents-Filling/ready for sale

3. Product-Use/Package-Emptying



These packages fit already to our reuse-system ...

... and we are also able to substitute these packages with our reuse-packaging-system



2. The benefits of the innovative Michalt-reuse-packaging-system



- **TRENDSETTING REUSE-SOLUTION:** The MICHALT-reuse-system is a very strong contribution to avoid plastic waste in landscape, seas and landfills, to reduce burning with serious side effects and elaborate recycling. It could be used also for sheet-and glass-packages
- **REMARKABLE PRODUCTIONCOST-SAVINGS:** It enables a durable use in production- and filling lines. As one packaging body could be refoiled and refilled for 20 up to 50 times, it could be used for three until five years. The costs of the MICHALT-reuse packaging system allow a costsaving in comparison to one way-recycling-packaging of about 40%
- **VALUABLE ENERGY- & RESSOURCES-SAVINGS:** The MICHALT-reuse packaging system saves also water, energy and cleaning treatments, which would be necessary in case of reusing the packaging body without foils.
- **TRUE SUSTAINABILITY:** It also helps to fulfill the CO2-goals of the EU, i.e. to reduce CO2-emission by 55% until 2030 compared to 1990, to realise the esg- (environment social government), the csr- (corporate social responsibility) criteria and to achieve the 17 UN goals on sustainable development
- **ADDITIONAL PRODUCT-QUALITY-IMPROVEMENT:** Enhances durability of goods by foiled packages, especially for food & beverage; makes longer shelf life possible
- **SMART COLLECTING:** Easy collecting of used or emptied packagings in specific collecting containers, who have a „check-in“-chip to avoid wrong packages
- **COMPETITIVE ADVANTAGE FOR PRODUCERS & BRANDS:** With the patented foiling system, a relevant costsaving, a verifiable sustainability-improvement und therefore excellent climate turning image MICHALT-clients can realise market excellence & leadership in topic, technology and market

3. The costsaving-potential in detail

B2C comparison

Conventional oneway & recycling packages

Michalt foiled reuse packaging

Packaging	Price	Packaging	Price of foil	Price of packaging body
Flasche 1L 	9.80€	Flasche 1L 	0,051€	1,451 €
Becher 0,5L 	5,76€	Becher 0,5L 	0,015€	1€ €
Rund-Gefäß 5L 	6,24€	Rund-Gefäß 5L 	0,02€	3,5€
Kosmetik-Gefäß 0,2L 	2,95€	Kosmetik-Gefäß 0,2L 	0,01€	0,38€
Pharma-Gefäß 	3,45€	Pharma-Gefäß 	0,014€	1€
Klein-Kaniste 5Lr 	3,38€	Klein-Kanister 5L 	0,25	3,45€
Dose 1L 	1,16€	Verpackung 1L 	0,051€	1,451€

Quelle:

B2B comparison

Conventional oneway & recycling packages



Michalt foiled reuse packaging

Bild	Preis	Bild	Folienpreis	Preis
Groß-Flasche 2L 	2,33 €	Groß-Flasche 2L 	0,08 €	1,81€
Groß-Becher 0,3L 	5,4€	Groß-Becher 0,3L 	0,0012 €	0,4€
Gr. Rund-Gefäß 10L 	44,40€	Gr. Rund-Gefäß 10L 	0,4 €	6,18€
Eimer klein 1L 	1,32€	Eimer klein 1L 	0,04€	1,64€
Eimer groß 20L 	6,58€	Eimer groß 20L 	0,51€	10,20€
Groß-Kanister 20L 	22,50€	Groß-Kanister 20L 	0,51€	8€

4-Years-B2B-cost-comparison 2lt PET Packaging

between one way-recycling-packaging and MICHALT reuse-packaging
shows a 353.700.- Costsaving (40%!)



VERGLEICH DER GESCHÄTZTEN PREISE FÜR EIN VOLUMEN VON 2-L-PET-VERPACKUNGEN UND NEUEN MEHRWEG-WIEDERVERWENDETEN DOPPELSCHICHTEN VERPACKUNGEN									
Hersteller - Großkunde /B2B/									
EINWEGVERPACKUNG							NEUE WIEDERGABE-2-LAGEN-WECHSELVERPACKUNG		
Jahresverbrauch			1 000 000 Stk				Jahresverbrauch		250 000 ks
Preis der 2-Liter-PET-Verpackung in der EU			0,29 €				Neupreis Verpackung 2l in EU/Karosserie+Folie+lid/		1,81 €
preis für blasformmaschine			65 000 €						
Preis für die Entsorgung 1 Stück in der EU			0,02 €				Preis für Entsorgung gebrauchter Folie 1 Stck		0,01 €
							Neue bedruckte Folie für 2 L Gebrauch		0,08 €
BERECHNUNG									
1 000 000 x 0.29			290 000 €				250 000 X 1,81		452 500 €
1 000 000 x 0,10			24 000 €				KöKörper+lid+Folien		
form			65 000 €						
KOSTEN			379000				folie 810 000 Stk		64 800 €
							umpackmaschine 1 ks		250 000 €
			abfall 1 mil./Stk.				Gesamtpreis :		767 300 €
WIEDERHOLUNG KOSTEN			379000 + 10 000 = 389000 €						
EINWEGVERPACKUNG IN 4 JAHREN							NEUE WIEDERGABE-2-LAGEN-WECHSELVERPACKUNG		
KAUF 4 MIL./STK			ABFALL 4 MIO./STK			Recycling PET-Sortierung	EINWEGVERPACKUNG IN 4 JAHREN		
1 JAHR		389 000				Zerkleinerung,	1 JAHR		767 300
2 JAHR		324 000				Waschen in heißem Wasser	2 JAHR	folien 1 000 000 Stk	80 000
3 JAHR		324 000				Wiederverwendung von	3 JAHR		80 000
4 JAHR		324 000				Recyclingmaterial bis zu 4 Mal	4 JAHR		80 000
AUSGABEN FÜR 4 JAHRE		1 361 000 €					GESAMTPREIS FÜR 4 JAHRE:		1 007 300
PREIS ZUSAMMEN WÄHREND 4 JAHREN			1 361 000 €				Ersparnis: 1 361 000-1 007 300= 353 700	Geld speren	353 700 €
DIE NEUE „MICHALT“-TECHNOLOGIE SPART GELD – AN ENDWARE, ENERGIE, CO2, ABFALL, VERBESSERT DAS TÜTEN-RECYCLING, IN DER MASSENPRODUKTION SPART MATERIAL FÜR NEUE VERPACKUNGEN									

Einsparung von rund 40% sind realistisch

4-Years-B2C-cost-comparison 2lt PET Packaging

between one way-recycling-packaging and MICHALT reuse-packaging
shows a 329.200.- Costsaving (40%!)



Hersteller - Endkunde / B2C/							
Jahresverbrauch			1 000 000 Stk			NEUE REPRODUKTION 2-LAGEN-ERSATZPAKET MIT CHIP	
Preis der 2-Liter-PET-Verpackung in der EU			0,29 €		KöKörper+lid+Folien+Chip	Kaufen Sie für ein Jahr 250 000 Stk.	477 500 €
preis für blasformmaschine			65 000 €			preis 1 Stk.	1,91 €
Preis für die Entsorgung 1 Stück in der EU			0,02 €			Preis für 1 Stück neue Folie mit Aufdruck	0.08€
BERECHNUNG							
1 000 000 x 0.29			290 000 €		ANZAHL FÄCHER x PREIS PRO FOLIE	250 000 X 1,91	477 500 €
1 000 000 x 0,10			24 000 €				
preis für blasformmaschine			65 000 €				
KOSTEN			379 000 €			Folie MIT DRUCK	1000000 x0,08= 80 000 €
						Umpackungsmaschine	250 000 €
1 jahre			abfall 1 mil./Stk.	10 000 €	Recyclinggebühr/ für 1 Jahr	KOSTEN:	791 800 €
WIEDERHOLUNG KOSTEN			455 000 +10 000 = 465 000 €		1 JAHRE		
EINWEGVERPACKUNG IN 4 JAHREN						NEUE WIEDERGABE-2-LAGEN-WECHSEL VERPACKUNG MIT CHIP	
KAUF 4 MIL./STK			ABFALL 4 MIO./STK				
1 JAHR		379 000	ABFALL				
2 JAHR		324 000	ABFALL		1 JAHR		791 800
3 JAHR		324 000	ABFALL		2 JAHR	1 080 000 Stk folie mit druck	80 000
4 JAHR		324 000	ABFALL		3 JAHR		80 000
AUSGABEN FÜR 4 JAHRE		1 361 000 €			4 JAHR		80 000
			abfall 4 mil./Stk.			PREIS	1 031 800
PREIS ZUSAMMEN WÄHREND 4 JAHREN			1 361 000 €			Ersparniss 1 361 000 - 1 031 800 = 329 200	Geld sparen 329 200 €

4. The offer of MICHALT

The MICHALT Offer is a hardware & software including packaging-system for food, beverage, cosmetics, household items, chemistry, pharma-products, agriculture, building materials and other industry & trade

HARDWARE

Packaging body: Bottles, containers, cans, jars etc. (everything has to be round)

Foils or films (made of one piece for complete inside- and outside covering/foiling)

The foil- or film-repacking machine is able to foil the packaging body bevor the filling with contents. After use/emptying the same machine is able to unwrap the packaging body.

Waste-collecting containers for used or emptied MICHALT-packagings B2B & B&C

Chip for waste-collecting containers

SERVICES & SOFTWARE

Packaging-design, Packaging-body-development, consulting for purchasing

Technical consulting on specification, typ, construction and features of the foiling/unwrapping machine; also on testing, controlling, maintaining; digital twin test runs

Outsource-foil-repacking in case of smaller amounts of packagings

Consulting for building up a new reuse-packaging-collecting system – development, design, collecting container-produktion, placement of container, management and controlling

Introduction, training and supervision for management of a packaging-collecting-sytem

5. Working with MICHALT

Step by step to corporate success

1. Evaluation of the actual client-packaging-technology-situation and existing demands, requirements and necessities; could often be the evaluation of an oneway-recycling-packaging;
2. Kick Off Workshop to compare the evaluation, the targets of the customer, the legal and environmental/sustainable situation with the possibilities and advantages of the innovative MICHALT-reuse-packaging system
3. Preparation of a complete MICHALT-offer including specification book of all technical features, hardware, service and software, including an evaluation of the planned results and costsavings. Process-Design vom offer to delivery, installation, training and start plus timetable und expectations on participation from both sides
4. Suggestions on Financing and funding opportunities as basic fundament for investment-, rentability- and business-planning
5. Decision & order placement
6. Implementation and installation of ordered hardware, technology and software; basic introduction of personell in working procedure and process according to specification and introduction plan and MICHALT reuse-packaging system
7. Testrun on digital twin; accompanied Machine-testrun, accompanied first reuse-foiling-packaging and first filling with goods
8. Start of permanent technical and organisational support and maintainance

6. Summary of benefits

**REUSING
IS BETTER THAN
RECYCLING!**

Innovative reuse-packaging by MICHALT



1. TRENDSETTING REUSE-PACKAGING SOLUTION

2. REMARKABLE PRODUCTIONCOST-SAVINGS

3. VALUABLE ENERGY- & RESSOURCES-SAVINGS

4. TRUE SUSTAINABILITY

5. ADDITIONAL PRODUCT-QUALITY-IMPROVEMENT & LONGER SHELF LIFE

6. SMART COLLECTING

7. COMPETITIVE ADVANTAGES FOR PRODUCERS & BRANDS

**GOT IT?
REUSING
IS BETTER THAN
RECYCLING!**



MICHALT Technology: Innovative Reuse Packaging System

ANY QUESTIONS?

