

Pack2Sustain

Best Practices in Supply Chain Engagement

February 2013

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Career & Company History



**Environmental
Engineering**
BS & MS
1993



Kraft Foods
1993 - 2011

**Sustainable
Packaging Expert
(2007 – 2011)**

- Tools & Metrics
- Design Platform Development
- Industry Representation



Pack2Sustain, LLC
2011 Launch

Partners / Clients

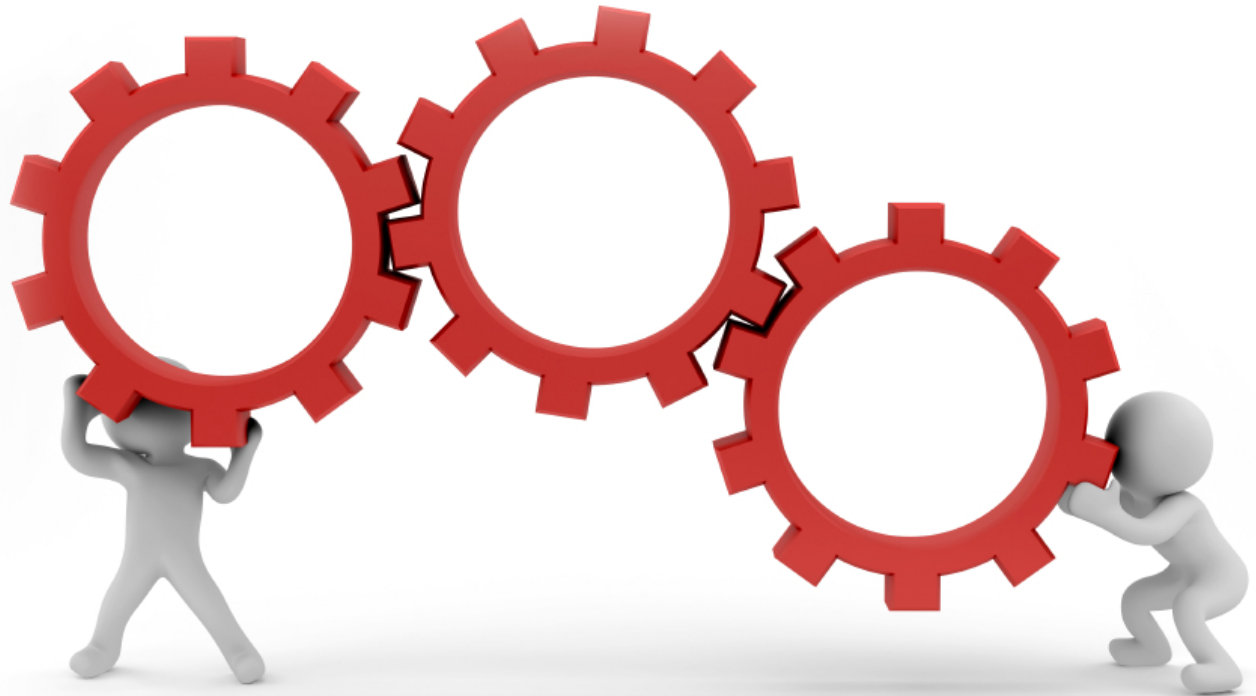
- ConAgra Foods
- PTIS / HAVI
- Earth911
- Clorox
- Sustainable Packaging Alliance



Supply Chain Engagement

We're all connected – make the most of it

Engagement is the Fruit of Collaboration...



... but Silos Are Comfortable - or
Enforced



How to Break Through?

Leverage...

- Organizational Structure
- Industry Best Practices
- External Resources / Relationships

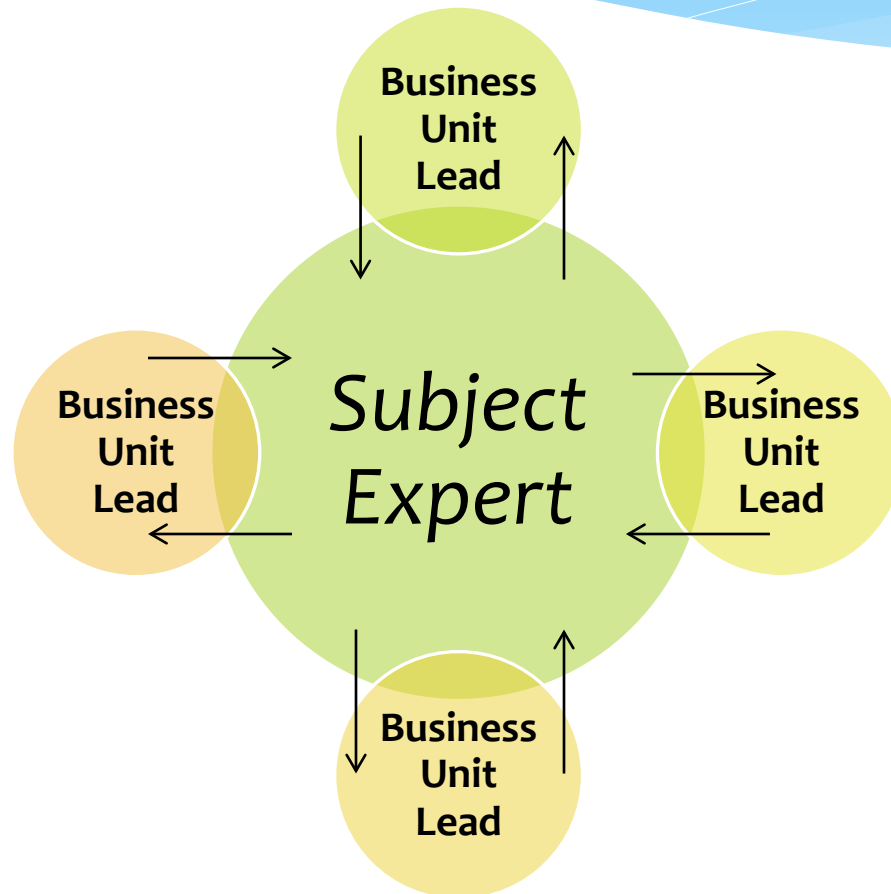
... as is fitting w/ your project or position in the organization



Organizational Structure

... & Internal Collaboration

Community of Practice Model (Formal)



Community of Practice Model (Formal)

Expert may be the only subject 'owner', which can limit penetration of change into the organization

Cultural influence is largely 'bottom-up', with the associated limitations on effectiveness

Expert / BU Lead network establishes clear points of contact & helps to drive strategy

Membership is typically passion-driven

Best practices can be shared quickly and easily

Simplifies benchmarking and tracking against corporate goals

Community of Practice Model (*Informal*)

Sharing Common Expertise, Solving Common Problems

- Traditional Communities of Practice are formed by industry peers – within or across organizations – who are tied by common expertise / passion
- CoPs can be used powerfully to:
 - *Solve problems quickly*
 - *Build and exchange knowledge*
 - *Enable execution of company strategy*



Community of Practice Model (*Informal*)

Truly informal CoPs function only so long as they are useful to their members

Benefits experienced by the employer(s) may be delayed and non-linear

CoPs can ignite members' creativity and tap into entrepreneurial drives

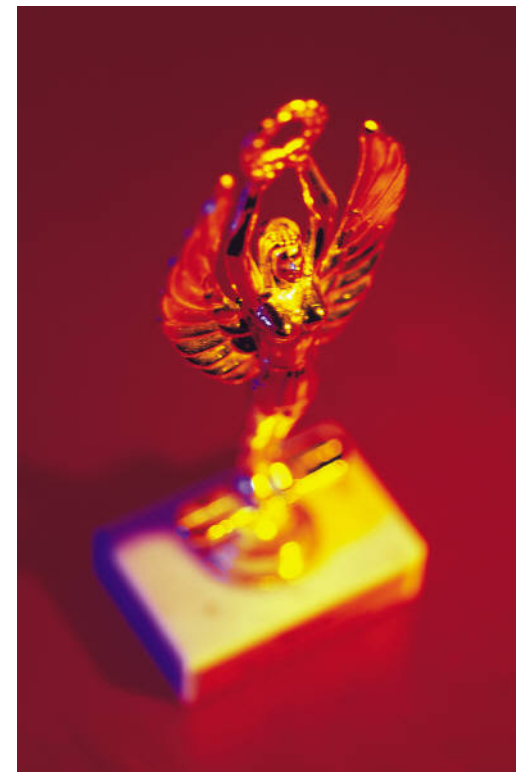
Significant professional skill development opportunity

Talent recruitment and retention benefits

Employee-Reward Model

Recognition-Driven Collaboration

- ConAgra Foods began an innovation-in-operations program in 1992
- Ongoing objectives are waste and energy reduction at production facilities, company-wide
- Bottom-up ideas are encouraged, with visible recognition from top management
- Share-out of concepts has expanded their adoption



Employee-Reward Model

‘Voluntary’ programs may experience variable interest / popularity

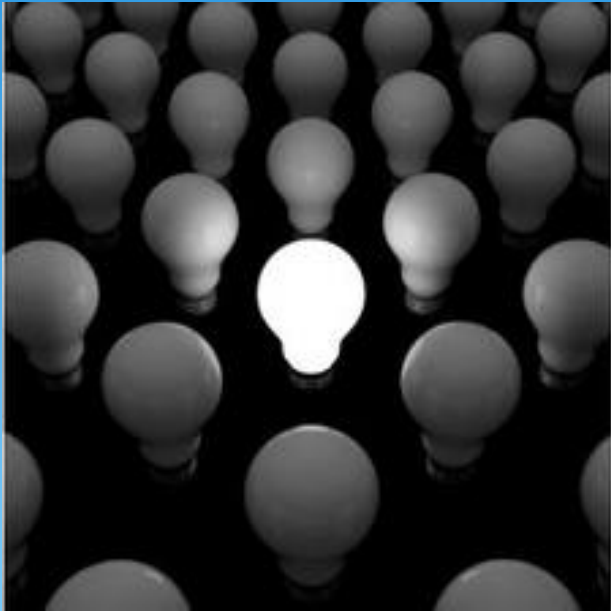


Senior leadership can demonstrate support without mandates

Employees are engaged and gain visibility

Opportunity for best practices to permeate company culture organically





Industry Best Practices

... & External Collaboration

PET Technology Collaborative (2012)

Companies Placing a Common Strategic Bet

The Objective

- Evolve Coca-Cola's partially plant-based PET to a solution entirely sourced from plants, benefiting brand-owner stakeholders

The Approach

- Shared commitment between The Coca-Cola Co., Nike Inc., Ford Motor Co., H. J. Heinz Co. and Proctor & Gamble to:
 - *Expand research knowledge, accelerate technology development, and develop commercial solutions*



Crowdsourcing - Direct Line to Out-of-Box Thinking

Unilever's Sustainable Living Lab (2012)

The Objective

- Position the company to achieve its 2020 Sustainability targets

The Approach

- Engage select thought leaders across civil society, government and industry through a 24-hour moderated online platform
 - Four forums:
 1. Sustainable Sourcing
 2. Sustainable Production & Distribution
 3. Consumer Behavior Change
 4. Recycling & Waste



Crowdsourcing - Direct Line to Out-of-Box Thinking

Unilever's Sustainable Living Lab (2012)

The Results

- 3,900 posted comments captured
 - Dialogue concerning Consumer Behavior Change was the most robust
 - Addressing design from a systemic – vs. tactical – approach was stressed
 - Re-thinking of delivery systems was common



Overall Expectation Going Forward: Action

Government as Stakeholder: *United States*

Sugar Beet Pulp: From Burden to Opportunity

The Objective

- The USDA and Washington State University sought to develop a profitable use for sugar beet pulp, a waste product from sugar extraction

The Approach

- Coextrusion of beet pulp with PLA yielded a biodegradable thermoplastic composite w/ mechanical properties similar to polystyrene and polypropylene
 - *PLA is itself derived from the sugars in beets, corn, sugarcane or switch grass*



Government as Stakeholder: *Spain*

Biodegradable Plastic from Whey Protein

The Objective

- The EU is addressing the challenge of finding new uses for the 50 million tons of whey produced by European cheese factories annually
 - *While 60% is currently reused, the balance is discarded*

The Approach

- IRIS, a Barcelona-based research institute, has extracted pure whey proteins via spray-drying
 - *These proteins are then used in thin layers to produce plastic films*
 - *Dissolution of the films in enzyme-activated water has been confirmed by the European Commission*
- Industrial scale-up of film and tray production is targeted for 2013



OfficeMax 'Boomerang Box'

The Objective

- Reduce box consumption amongst participating businesses customers

The Approach

- Reuse & recycling program for OfficeMax delivery boxes

The Details

- The reusable, stackable delivery boxes are retained at customer facilities and back-hauled at a subsequent delivery date. An 80% reduction was achieved after the June 2012 start in Seattle, WA



“The boomerang box was piloted in Seattle because the city has a very large number of customers that demand a reusable shipping carton solution.”

Safeway Reusable Product Containers

The Objective

- Corrugated elimination (*17 million pounds achieved*)

The Approach

- Expand RPC use beyond bread, milk and soda to include fresh wet-pack produce (*items that are kept on ice until they reach the store*)
- RPCs can be stacked densely, aiding in back-haul efficiency

The Details

- Supply chain engagement was crucial, as Safeway's growers and distributors needed to commit to RPCs
- Safeway's major supplier of RPCs is IFCO Systems
 - *IFCO handles all container logistics, from manufacture to cleaning to re-entry into the supply chain*





External Tools & Resources

Collaboration Enablers

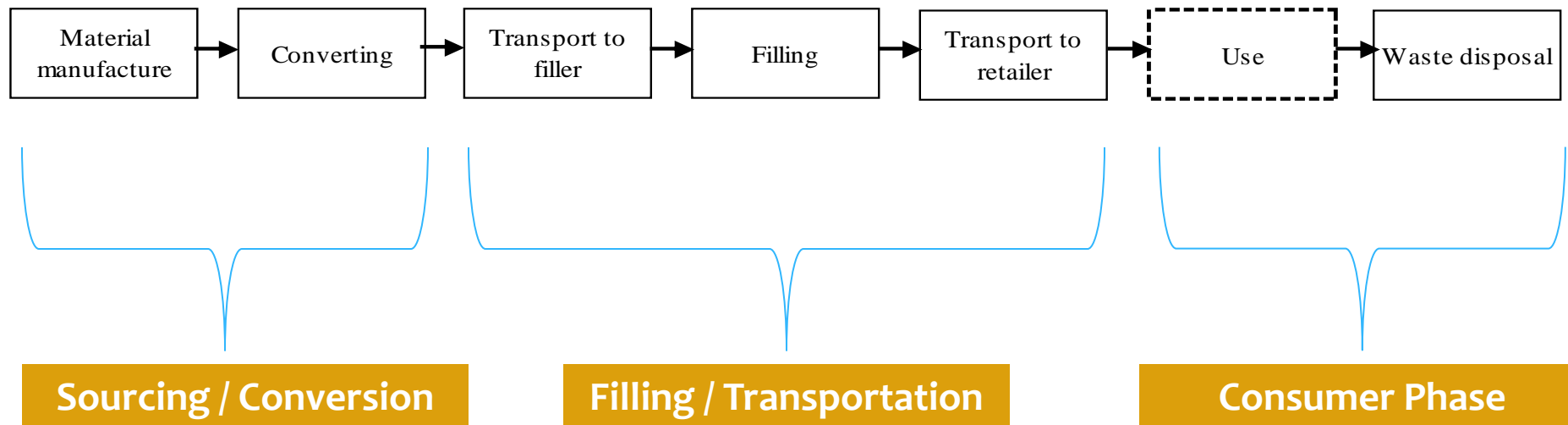
Packaging Impact Quick Evaluation Tool

- PIQET was developed and is distributed by the Sustainable Packaging Alliance
- Pack2Sustain is a Channel Partner with SPA, supporting the expansion of PIQET in North America
- PIQET is customized specifically for packaging applications, and can assess impacts associated with design features across relevant material supply chains
- LCI datasets from multiple global regions are available, and are regularly updated



PIQET: Analysis that Spans the Supply Chain

PIQET does not model the use phase, but does address the performance of reusable packaging



PIQET: Illustrative Reusable Packaging Example

Browser tabs: Inbox (9) - jay.edwards@p... Pack2sustain - Calendar x Pandora One - Listen to P... Wizard - PIQET 3.2-14 x

Address bar: piqet.sustainablepack.org/projects/wizard/returnables/7741/44536/

Browser bookmarks: https--efs.uspto Provisional Applicati... Ryan Pauly Design Timeshare Vacation ... US EPA Greenhouse Gas Equ... DJ Tempest 402 Mus... Depeche Mode Urban Professionals FindAComposter.co...

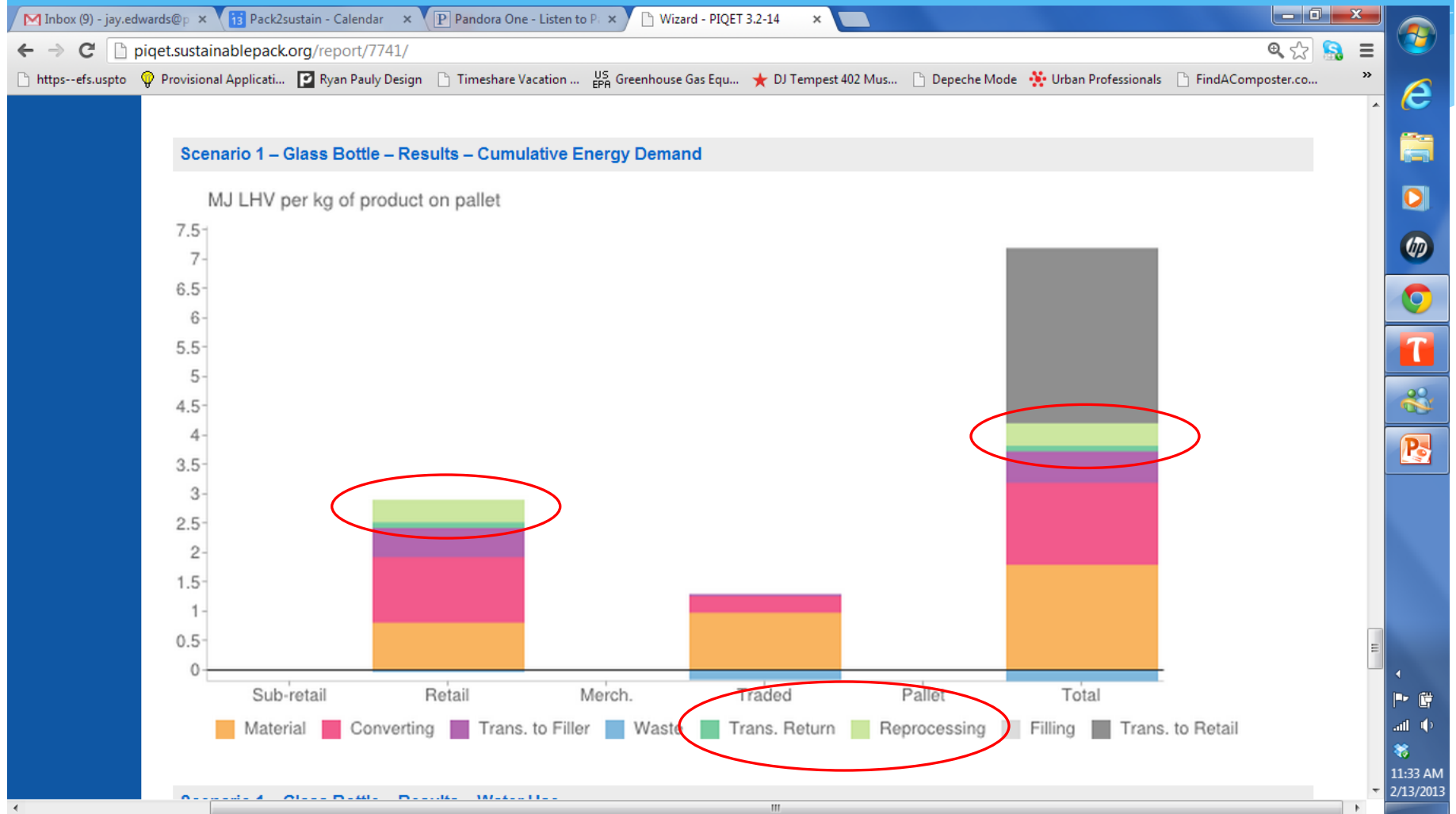
No.	Component	Returnable?	Trip rate	
			No. Cycles	Top-up %
1	USA - Resin - PP (Closure)	No	1.0	50.0
2	USA - Glass - clear (Bottle)	Yes	15.0	50.0
3	USA - Board - cardboard corrugated (Case)	No	1.0	50.0

No.	Component	Transport mode	Distance	Electricity consumption	Gas consumption	Water consumption
			km	MJ/t	MJ/t	kL/t
1	USA - Resin - PP (Closure)	-----	0.0	0.0	0.0	0.0
2	USA - Glass - clear (Bottle)	Rigid 15t Truck, 75%loaded, rural	85.0	287.0	189.0	8.0
3	USA - Board - cardboard corrugated (Case)	-----	0.0	0.0	0.0	0.0

Navigation: « Back Next »

System clock: 11:36 AM 2/13/2013

PIQET: Illustrative Reusable Packaging Example



PIQET: Enabling Collaboration

http://piqet.sustainablepack.org/projects/

IoPP Packaging Sustainability ... Pack2sustain - Calendar Wizard - PIQET 3.2-14

Norton Safe Web Identity Safe

bing

Ryan Pauly Design Timeshare Vacation Prope... US EPA Greenhouse Gas Equivale... DJ Tempest 402 Music, Ly... Depeche Mode Urban Professionals FindAComposter.com - fi... Knowledge Broker (TM) E...

PIQET 3.2-14

Home | New Project | View Projects | Custom Materials | Help Centre

Projects

Use the filter to find projects that you or your team members have created in PIQET. You may edit, copy, view or delete projects based on your user privileges.

Project Name or Code: **Project Status:** Draft **Project Owner:** Anyone **Project Team:** SPA Demos [Apply Filter](#) [Clear](#)

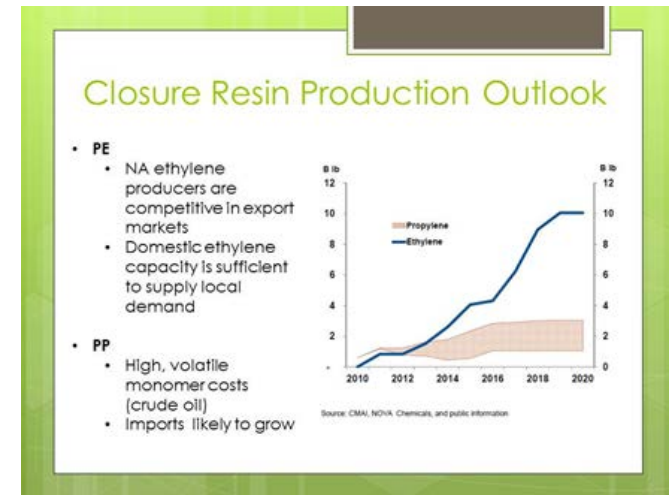
Name	Code	Status	Owner	Privacy Level	Team	Actions
Cling Wrap 60m	P339100-24/Nov/10	Draft	Bryce Hedditch	Shared with Team	SPA Demos	View Report Save As...
Demonstration - bottles (Simon)	P387800-27/Feb/11	Draft	Andrew Carre	Shared with Team	SPA Demos	View Report Save As...
Sample Project 1	P261600-14/Jun/10	Draft	Karli Verghese	Shared with Team	SPA Demos	View Report Save As...
Sample Project 1	P261700-14/Jun/10	Draft	Bryce Hedditch	Shared with Team	SPA Demos	View Report Save As...
Sample Project 1	P259000-10/Jun/10	Draft	Jocelyn Buteau (SUSPENDED)	Shared with Team	SPA Demos	View Report Save As...
Sample Project 1	P275500-06/Jul/10	Draft	Andrew Carre	Shared with Team	SPA Demos	View Report Save As...
Sample Project 1 (copy)	P412200-18/Apr/11	Draft	Simon Day	Shared with Team	SPA Demos	View Report Save As...

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Pack2Sustain Custom Technology Scoping

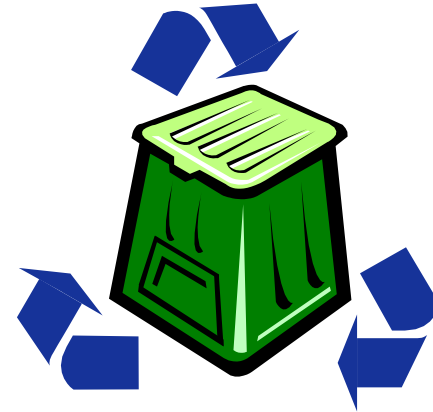
Building Technology Pipelines

- A technical service rooted in over 19 years of CPG R&D experience and on demonstrated thought leadership in Sustainable Packaging
- Customizable approach, based on cost targets, environmental-performance goals or material-sourcing criteria
- The interactive service links seamlessly into existing project teams



Pack2Sustain Design-for-Recovery Report

- Referenced summary of the best available industry design guidance on...
 - *Recyclability*
 - *Compostability*
- Structured to deliver clear, actionable direction to packaging designers
- Customized format to maximize day-to-day utility
- Ideal for packaging portfolio assessments



Pack2Sustain Design-for-Recovery Report

Design-for-Recovery Report: Contents
2012

P2S

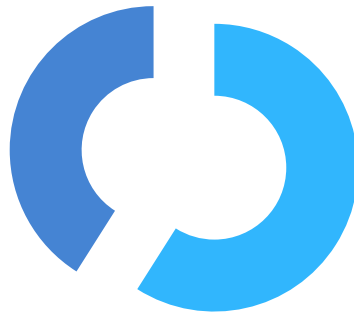
Document Scope	1
<i>Compostability (Paperboard and Bioplastics)</i>	
Treatments and coatings	1-2
Dyes and colorants	3
Adhesives	3
Foil and metallization	3
Multi-laminates and composites	4
Certifications and labeling	4
<i>Recyclability (Paperboard)</i>	
Treatments and coatings	5
Dyes and colorants	5
Adhesives	5
Foil and metallization	5
Multi-laminates and composites	6
Certification	6
<i>Recyclability (Plastics)</i>	
Polypropylene (PP)	7

Pack2Sustain Design-for-Recovery Report

<i>Recyclability (Plastics, cont'd)</i>	
High-Density Polyethylene (HDPE)	7
Low-Density Polyethylene (LDPE)	8
Polyethylene Terephthalate (PET)	8
Polystyrene (PS)	9
Polyvinyl Chloride (PVC)	9
 <i>Quick-Reference Grids</i>	
Paperboard	10
Plastics	11-13

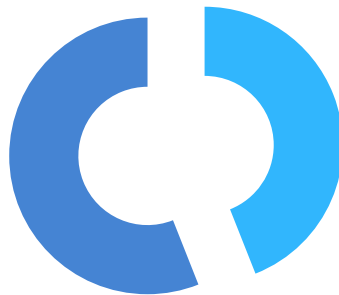
Consumers' Voice: "Please Help Me" | PRS* *Packaging & the Environment Study, 2012*

Environmental Messaging → Stated Purchase Preference



■ Favorable - 59%
■ Not Favorable

Drivers When Consumers Fail to Recycle



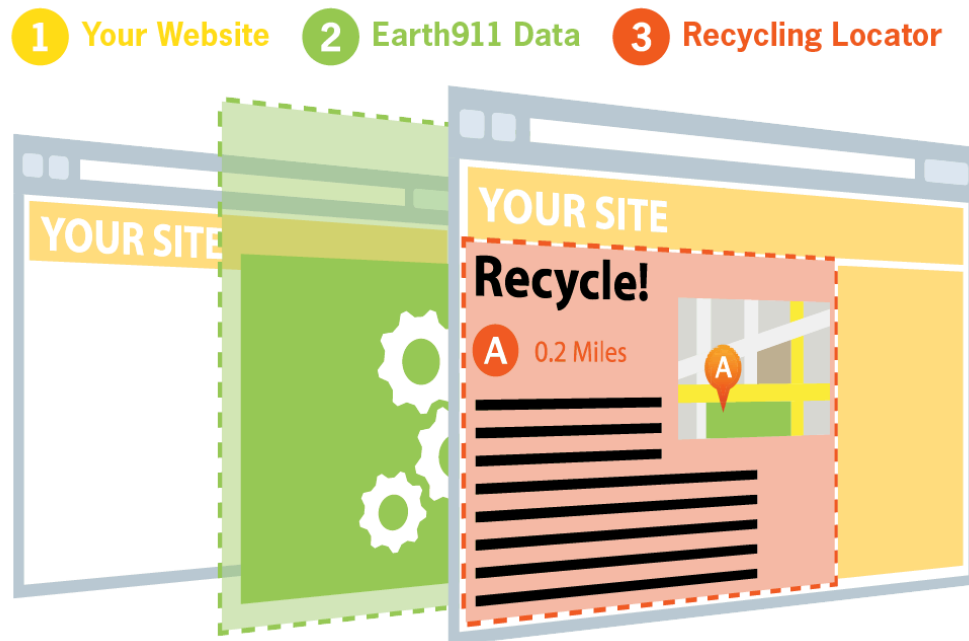
*Opportunity for clearer
recyclability messaging*

■ Forget - 44%
■ Misc.

Earth911: The Recycling Authority

Do your customers' homework for them by:

- Leveraging Earth911's recycling directory, the largest in North America
- Demonstrating the recyclability of your packaging materials directly on your web site



Thank You

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<http://www.pack2sustain.com/>