Materials Pooling (C): Pitfalls and Learning from Collaboration

Initially one of the strongest working groups in the Materials Pooling Project focused on hexavalent chromium. Led by Hugh Vallely from Harley-Davidson, a long-time member of the Society for Organizational Learning, the group started with the strongest participation, the greatest diversity, and, on the surface, the most to gain from pooling sustainable materials.

In preparation for their first meeting on December 3, 2003 the group developed three guiding documents:

- A summary of end use requirements (Exhibit 1);
- A list of short-term and long-term actions and priorities for exploring these requirements and moving forward together on the key issues (Exhibit 2); and,
- A life cycle map for hex chrome to determine exactly where in the process the material might be mitigated or exchanged (Exhibit 3).

However, after three group meetings in January and February 2004, the challenges of collaboration turned into real obstacles. In preparation for a fourth phone call scheduled for February 26, 2004, Vallely summarized the specific business propositions for hex chrome that had been voiced by the five key stakeholders in the group (Exhibit 4). The vast differences between these goals became more and more clear, effectively ending work on the collaboration.

Success and Learning in the Materials Project

When asked to describe the success of the Materials Pooling Project to date, Joe Laur, a co-founder of the Sustainability Consortium replied: “I wouldn’t necessarily call Materials Pooling successful. We found a lot of what didn’t work. We use this material in such a different way that we couldn’t connect
the dots in many cases. To pool materials without having a deeper connection to the entire value chain, didn’t work.”

And yet, Lauer recognized that even though the overall collaboration faced clear challenges, the fundamental goal of the Sustainability Consortium led to some important outcomes: “We had people coming here who are beyond the ‘why’ of sustainability; they want to get to the ‘what’ and ‘how’. Some of that learning has translated into changes within companies. So if we define success as increasing the learning and moving the overall agenda forward, yes we’ve done that.

Other companies identified the same issues in regard to the Materials Pooling Project. In at least three cases, the insights and connections that certain individuals gained through the Consortium helped them launch industry-based sustainability initiatives outside the confines of the Consortium. Nike’s Vanessa Margolis, for example, explained how the Materials Pooling Project helped her develop the Leather Working Group [LWG]:

I don’t think the LWG would have happened without the Materials Pooling Project. It was a safe space to explore things. How could I have done that by working by myself in a cubicle?

I learned a lot. I met some cool people…Networking, expanding horizons - I found that valuable. …In the Consortium you’re bringing people together who don’t know each other to tackle a problem. You’re learning and forming relationships while you’re leaning. And I appreciated that – it felt more authentic to me. I’m more of a tangible person. I have a finite period of time when I can talk theoretically. We’re given a challenge, see what happens, and get to know each other while we do it.

Likewise, John Delfausse from Aveda acknowledged several ways in which the Consortium supported his overall success:

I knew we were already doing good things. Aveda was focused on recycled content and so on. But I was looking for a long term kind of vision. The two groups that I very much got involved with were the Sustainable Packaging Coalition [and] the SoL Sustainability Consortium….

I had never met so many people from different industries and different parts of the supply chain. From British Petroleum making the resins for polypropylene, to the users, marketers, retailers, everyone else. It was a big influence to see all these different people across different supply chains.

I’ve been working on polypropylene ever since the consortium, trying to find other people that had polypropylene that we could use, like The Coz Group Inc. (used lab trays and computer cases), Entegris (computer shipping cases), National Recycling (used CD cases), and The Gap (used hangers). The critical thing for us is clean material. Sustainable sources of material that are clean, with high clarity… That was a learning from the Consortium. How to
identify the pedigree of the material? Where did it come from? What processes were used? How many heat cycles did it go through? That insight is only because of the Materials Pooling Project.

A lot of people say, ‘No one will do this or that.’ I tell them, ‘Look, when it comes to protecting the environment or doing work like this, you’d be surprised how people can get turned on when they see an opportunity. I was never involved with this stuff, and now it’s a huge part of my life. I discovered this work later in my life, and now I’ve found my passion! The Sustainability Consortium was a big part of that.’

Reflecting on the broader value of the Consortium, Chris Page provided one other important view on its value:

One of the overarching aims of the Sustainability Consortium is to nurture projects with long-term change goals in which companies work together to accomplish what they cannot do on their own. In this context, the Materials Pooling Project is a model effort. Although the technological hurdles may loom large on the road to sustainability, getting people to wrap their minds around problems as complex as changing an industrial system, and doing it with passion and patience, is the critical start. Without it, change of any kind will never happen.

Case Questions:

1. Compare the Senge-Malloch letter (Exhibit 1 in the A Case): Intelligent Materials Pooling Initiative) with the notes from the Hex Chrome Working Group’s conference calls in early 2002 (Exhibit 4 in the C Case). What are the key causes for the large gap between the project’s initial vision and its working reality?

2. If you had been on the Hex Chrome Working Group, how would you have tried to resolve the obstacles it faced? How would these issues play out with different materials, or with different players?
**Exhibit 1**

(Same as Exhibit 1 in the B Case)

Hex Chrome Summary – End Use Requirements

Need: To develop a cost effective and sustainable coating for light metals

End Use Requirements

Harley-Davidson:
- High temperature (>90°C)
- Clear appearance (pass 192 hour neutral salt spray to red rust)
- Fastener focus (torque/tension requirements)

UTC:
- High temperature (> x° C)
- Long life (x hours neutral salt spray to red rust)
- Color not critical
- Non-fastener focus

Automotive:
- Corrosion resistance equivalent to 8 micron zinc plate plus iridescent chromate
- Torque/tension requirements for fastener applications
- Color - clear or black although yellow is acceptable
- Corrosion life - 144 hours neutral salt spray to red rust.

Note: In some applications conductivity and or grounding required.
### Exhibit 2

<table>
<thead>
<tr>
<th>Short/Long Term</th>
<th>Priority</th>
<th>Options/Future Actions</th>
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<tbody>
<tr>
<td>S</td>
<td>A</td>
<td>Pooling specifications</td>
</tr>
<tr>
<td>S</td>
<td>A</td>
<td>Sharing existing results/creating database</td>
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<tr>
<td>L</td>
<td>A</td>
<td>Develop internal value proposition within each company (life cycle value/sustainability metrics)</td>
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<tr>
<td>S</td>
<td>A</td>
<td>Identify and nominate applicators of others added to this collaborative work group</td>
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<tr>
<td>L</td>
<td>A</td>
<td>Create opportunities/alternative list</td>
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<tr>
<td>L</td>
<td>A</td>
<td>Identify short term and long term options/approaches</td>
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<tr>
<td>S</td>
<td>A</td>
<td>Shared comprehensive &quot;literature search&quot; (existing)</td>
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<tr>
<td>L</td>
<td>A</td>
<td>Pool R &amp; D efforts*</td>
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<tr>
<td>L</td>
<td>B</td>
<td>Identify/sponsor/support external development*</td>
</tr>
<tr>
<td>S</td>
<td>B</td>
<td>Sharing regulatory requirements</td>
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</tbody>
</table>

*Options

- Chemical companies
- End users
- Applicators
- Standards organizations (e.g., revised ASTM 3633)
- Research organizations
Exhibit 3  Hex Chrome Life Cycle Map

Supply Chain

Tier - 4
Substrate (Steel Rod)

Tier - 3
Fab (Screw)
Finish (Chrome/Paint)

Tier - 2
Part (Transmission)

Tier - 1
Durable Good (Car)

Life (7 yrs)

Landfill or Recycle
Chrome Out

Mine

Refinery

Chrome

Chrome enters here
### Exhibit 4

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<th>Metal/Finish Combo</th>
<th>Adhesion</th>
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Endnotes

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