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*Article I in a series*

## **An Open Innovation Primer**

This is the first in a series of “how-to” articles for getting tangible results with an open innovation approach to research and development specifically in the food and beverage category. Written from hands on experience and a strong knowledge of the open innovation space, this article covers both how to get started and how to set the strategy. The remaining series will address:

- Soliciting proposals for external research partners
- Filtering proposals and getting to contracts with research partners
- Managing a network of external partners including weeding and feeding

## **About the Author**

Carlos Barroso is a highly experienced, international Research & Development Executive in consumer products, with deep experience in Foods and Beverages. He has built an extensive, open innovation network with external research partners across universities, suppliers, consultants, and small entrepreneurs located around the world.

Carlos is the Founder and President of CJB and Associates, a high level R&D consulting firm specializing in Product Development for the Food and Beverage category. CJB and Associates manages open innovation projects, conducts Innovation Assessments, creates Quality Assurance programs, and facilitates innovation and strategy ideation sessions as well as helping with high level R&D strategy.

Prior to starting his consulting firm, Carlos was the Senior Vice President for R&D for PepsiCo’s \$27 billion global food and snacks business. Before joining PepsiCo, Carlos was an Associate Director of R&D at Procter & Gamble. In addition to R&D he has Market Research experience in consumer product testing.

## **How to begin**

You’re ready to embark on an open innovation project. Maybe you’ve already had some projects. Maybe it’s your first time. Regardless, the first step is to clearly define the problem and what success would look like. Let’s also be sure to ask why we think we need an open innovation approach and how do we think it will be different from the way innovation has been done in the past.

Open innovation has become part of the innovation vernacular since Dr. Henry Chesbrough coined the term in his 2003 publication on it. Procter & Gamble embraced it early and brought it to the world of Consumer Product Goods companies with the 2006 publication of “Connect and Develop” by Larry Huston and Nabil Sakkab in the Harvard Business Review.

It’s a good idea to spell out what open innovation means to your company. Keep it simple. If all your R&D has been done in house it may be as simple as looking for some development or technology from outside

the company. If you already have a strong network of external partners it may mean expanding that network to research partners in other fields or industries or geographies

### **Set The Innovation Strategy And Define Success.**

I have often seen teams jump on an open innovation project without spending enough time up front to define and align on what success will look like. The focus is often on the scouting part of the process without having spent a lot of time agreeing on the problem to be solved and the criteria for success. While seemingly trivial, setting a solid idea for what qualifies as “success” is a vital first step in any innovation oriented project. All too often, an otherwise capable team will embark on a project without clearly outlining this step and will be brought to a standstill when confronted with the varying goals in the different functions or divisions of a company.

Setting the innovation strategy should be done cross functionally and with strong management support and involvement. Too often we’ll see an open innovation project go after solutions to problems that are not seen as priorities because the team has not done the alignment with enough of the internal customers. In the CPG world you have to have engagement from Supply Chain, Marketing, Sales, Legal and R&D and possibly Human Resources if there is a cultural hurdle to over come.

At CJB and Associates, we spend a lot of time on the upfront part of a project assembling the right team and having an in depth review of what the innovation priorities are and where and how open innovation can help. It’s important to include the existing network of research partners. Every company we’ve worked with has some sort of network in place. Usually, they include suppliers, a group of consultant experts, and possibly some universities and trade association groups. If a good solution can be found with an existing relationship it saves the time and risk of having to establish a new one.

### **Considerations For Setting The Success Criteria**

Every project will have a unique set of success criteria, the more specific the better. We ask the client to clearly describe what will be different a year from now and three years from now if the open innovation project is a success. The use of imagery is especially helpful for a cross-functional team as it allows each function to describe success from their perspective.

The R&D function may talk about breakthrough technology. The legal team will want solid intellectual property (IP) protection and little risk of infringing on other’s IP. The marketing team will think about a superior consumer proposition. Sales will want a great story to bring to customers and a cost basis they can work with. Supply chain will want to make sure the new technologies that emerge can be scaled up and planned for in their capacity and ingredient purchasing planning. Finally, senior management should be able to articulate expectations of what a successful increase in sales and profit would look like and over what time frame.

Once the expectations from the various functions on the project team are clearly articulated it is up to the team to distill them down to a short list of project objectives with a clear definition of success and expected actions. CJB and Associates strongly recommends that these objectives and definitions of success are written in a “contract” and signed by all team members. This is the time for second guessing the priorities, not once the requests for proposals are out and the team is contracting work with external research partners.

## **What May Be Included As Success:**

Solutions from non-obvious sources. Keep an open mind towards non-conventional solutions to achieve your goal. Often times such a solution will end up saving valuable time and money. We have found one of the hallmarks of successful open innovation is when a solution comes from an unexpected source. For example, we found a lead for a lower sodium salt from a group working on solutions for osteoporosis. The research group happened to use salt in their proof of principle for a technology that was never intended to apply to the food sector. In a different project that looked for a better way to refine healthy edible oils we found a promising lead from a group working on fuel cell technologies. In this case the fuel cell team was working with novel separation technologies that as it turned out could work for edible oils as well.

In projects involving food ingredients we have found many break through solutions from the pharmaceuticals world. Pharmaceutical companies have spent years working on better drug delivery technologies. Many of those technologies are ideal for delivering flavors. The pharma groups are usually happy to find new applications for existing technologies and the food companies can take advantage of the years of development and safety testing without spending the many millions of dollars typical of a pharma R&D project.

Protect the Technology. Protecting the technology can be realized a number of ways. The important thing is to make sure your company will own it for the applications you're interested in. Patents are a common way to protect IP. However, you need to be thoughtful about who owns the patent if you engage external research partners. You can demand full ownership of any emerging IP. But, it may be more constructive to consider jointly owned IP where each party defines the applications they want to own. For example, if you are looking for a better oil for frying potato chips, you may be willing to do joint research with an edible oil producer who is primarily interested in the french fry business. As long as you own the IP for potato chips and have no vested interest in the french fry business you can allow the oil producer to own the french fry application.

### Building a superior consumer proposition

Because we're focusing on the CPG world any success criteria has to involve a benefit to the consumer. It could be better taste, a health benefit, a cost benefit or some combination. A tangible and measurable definition of success will make defining actionable objectives much easier. For example, if better taste is an objective set a consumer test win versus competition or an internal reference as success criteria. If health is an objective you may need a clinical trial or at least very clear product nutritional guidance (e.g. no trans fat and less than 15% saturated fat; less than 100 calories per serving).

### Strategic fit

Having a strategic fit assumes there is a clear innovation and business strategy in place. For example, you may have a strategy of improving the health and wellness of your portfolio against a clear set of objectives such as having over 50% of new revenue from healthy products. A project that addresses that strategy such as a lower sodium technology or a natural non-caloric sweetener would likely be a good strategic fit. Though you may chose to pursue an open innovation search that is not a strategic priority it will still be helpful to be explicit whether or not a strategic fit is a relevant success criteria or not.

### Likelihood of Success

There is a natural tension between the degree of breakthrough of an objective and the likelihood of success. A tasty and inexpensive non-caloric carbohydrate with heart health benefits would be a breakthrough

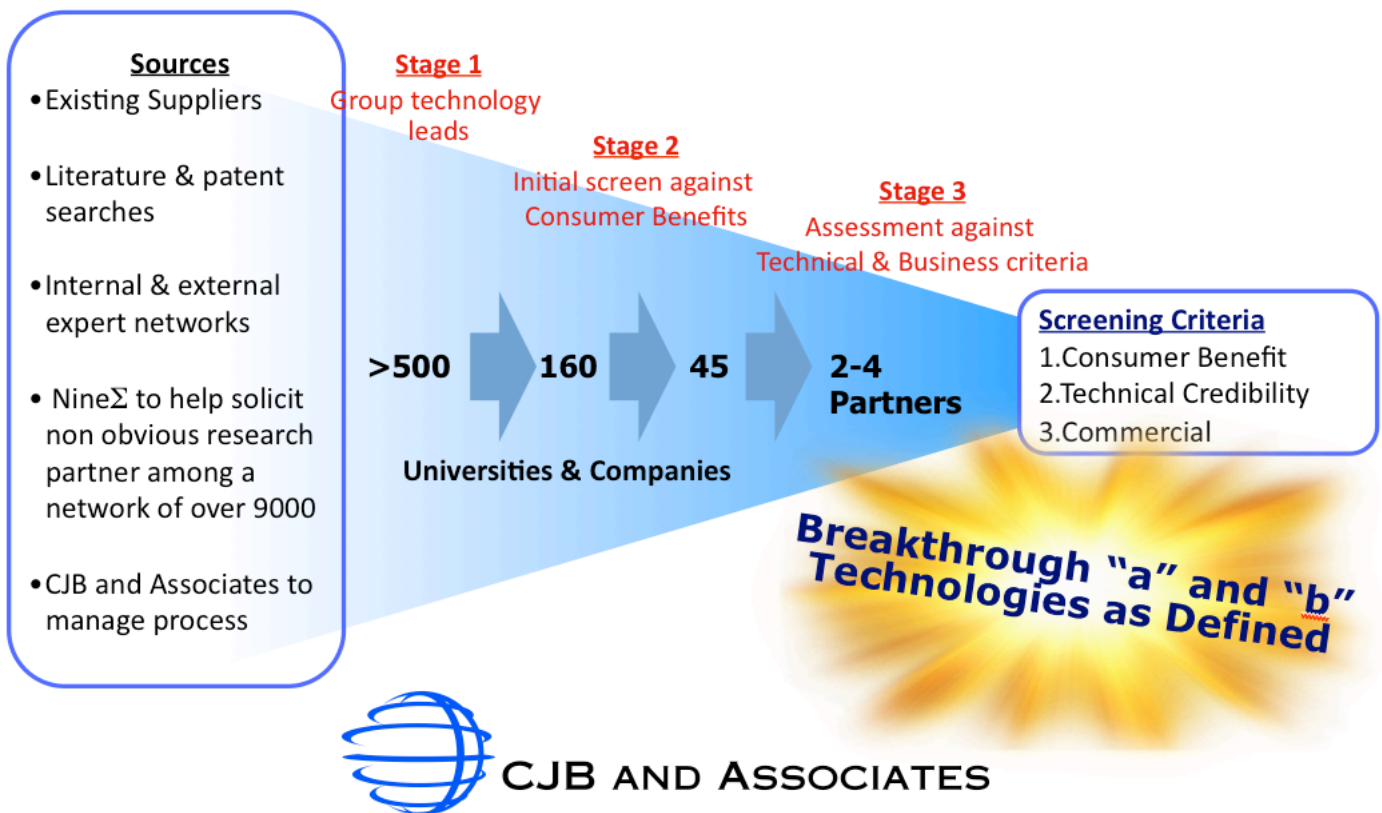
objective but a higher risk (or lower chance of success) and should be reflected accordingly. CJB and associates recommends a portfolio of objectives and a mix of prospective technical solutions to balance a risk / reward portfolio.

**Lay out the game plan and communicate milestones**

With the project objectives set and aligned be sure to communicate broadly to the team and senior management what to expect in the coming months and even years. In our experience many senior teams are enthusiastic about taking on breakthrough innovation but are used to time tables that are more appropriate for close in product upgrades, not game changing technical innovation. We have found it is especially helpful to define tangible milestones in the project on a least a quarterly basis to make sure the broader team and management knows what to expect and has the opportunity engage in the process if they don't agree with the project flow or want to build on it.

The diagram below is an example of how a team can lay out a general game plan for the project.

**Sample Open Innovation Game Plan**



**Open Innovation Project Kick Off**

With the objectives set and the key milestones and timing broadly communicated the next step is an official kick off. Key stakeholders from all the functions should be invited. It's important to make roles clear.

Some individuals will be advisors while others will be owners and, of course, there is an overall project leader who can make decisions.

### Setting the Budget

Be sure to have a budget in hand to get things moving. It's hard to know exactly how much to budget but we recommend having enough to get through the first six months which is typically how long it will take to solicit proposals from external research partners, filter the proposals, and establish contracts to engage a short list of partners. Ideally, there should be enough for some early seed money, typically for generating early prototypes. For example, if you ask prospective research partners to submit "proof of principle" prototypes there may be a cost involved. If it is coming from a university where budgets are typically strapped even a modest cost of a few thousands dollars will likely need to be covered by the requestor.

A typical budget for the first phase of an open innovation project is \$250,000 - \$500,000 which includes engaging a firm for the search, related project travel and consultants if needed. Doing an open innovation search "on the cheap" usually means talking to suppliers and partners who are already in your existing network. This may be fine but don't expect novel or protectable solutions.

### The Next Step

With the team assembled, success criteria articulated and communicated and a budget set you are ready to begin the process of soliciting proposals from external research partners. Stay tuned for the next article in this open innovation primer series . . .