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Focus on FLAVORS

STAFF REPORT

Tobacco International interviews George Cassels-Smith and Tom Cravotta of Tobacco Technology, Inc.



What is the function of a flavor?

George Cassels-Smith, director of sales, USA, and c.e.o: Flavors are a small percentage of the finished product, but they're probably the most important product, second to the tobacco, and they serve a number of functions. Among them, consistency: flavors provide a signature to a tobacco product, as well as compensate for fluctuations that may occur because of varying origins of tobaccos and crop years. And flavors separate products from their competition by having a unique taste that differentiates the one brand. They also help benefit certain taste characteristics. Flavors are also a very effective way to modify the taste character without having to resort to more expensive tobacco blends. In addition, flavors are tools which allow manufacturers to reduce tar and nicotine deliveries with minimal mainstream smoke flavor change.

What makes a great tobacco flavorist?

Tom Cravotta, president, TTI USA: My definition of a great tobacco flavorist would be a person who has a very strong understanding of all aroma chemicals, botanical extracts, essential oils, and other essential flavoring materials that are suited for use in tobacco products, as well as food products. More importantly, they must understand the processing of the tobacco with those products throughout the flavoring process. And most



importantly, they must understand the effect these added flavors have on a tobacco product that is going to be pyrolyzed, along with the pyrolysis process and smoking dynamics that surround the total smoking experience.

This brings you to the next level of understanding: that we're not selling a flavor — ultimately, we're selling smoke. So if you don't smoke the product and understand what effects it when it is pyrolyzed, there is no advantage of a food scientist to work on a tobacco-related project.

They are two completely different specialties.

The next level is that the flavorist must understand the physics associated with the aerosol generated by the pyrolysis of the tobacco blend itself in conjunction with flavors that are pyrolyzed with it, and that the aerosol is the smoke that you're ultimately selling. It is also important for them to understand the smoking articles construction. All of these factors will effect the taste of the smoke and ultimately that is what a tobacco flavorist is designing — the taste of a smoke, not something in a bottle to drink or smell.



George Cassels-Smith: A tobacco flavorist has to understand the flavoring materials he can use, but also how they effect the tobacco smoke. A lot of people will have a list of what the manufacturer will accept, but they don't know how item A and item B perform. So when they are challenged to modify an existing product, they're just grabbing in the dark, trying to figure that out.

Whereas, to me, a real tobacco flavorist will understand that the product needs a little bit of this and that, and ultimately he will create the desired result.

We have lots of sophisticated instrumentation and software for developing flavors, but honestly our strongest assets are the people that we employ. Their skills are the real value that we offer because the experienced nose is still the most powerful instrument. You can't have any mass spectrometer tell you what the nose can. Our people have the knowledge of what to blend to make a proper taste and that's the core of our business. Our tobacco flavorist Bob Miller has been with TTI for 23 years, and he's played a vital role by imparting his knowledge on to the younger generation. And our senior flavorist, Jack Rothenhoefer, has over 28 years experience and he's one of the most respected tobacco flavorists in the industry.

Is the consumption of flavors still rising?

George Cassels-Smith: For the cigarette market, as deliveries are reduced because of mandates by governments, the use of flavors has increased. Within the cigar market, more companies are looking to use flavorings because there's been a switch to smaller cigars, and smaller cigars tend to be hotter and more cellulosic, especially machine-made cigars. To compensate for that, companies are coming up with flavored models, even to the point of having distinctively flavored models, to attract new customers to the genre. The snuff industry has seen that some distinctively flavored products are appealing to their market, and they've embraced this idea and are coming up with more unique flavored snuffs. It used to be that everybody had a wintergreen flavor and a rose flavor. Now there are many more unique



TTI at a Glance

TTI is a 30-year-old private flavor house dedicated exclusively to all aspects of the tobacco flavoring business. Duke Cassels-Smith founded the company in 1975 outside of Baltimore, Maryland, USA. Today, TTI is staffed by experienced scientists and industry leaders who are attuned to the highest standards of production and customer service. TTI is agile in serving large multinationals, state run monopolies, and a growing number of specialty players in the ever-evolving tobacco industry around the world.

TTI's mission is to create custom and widely accepted signature flavors for client products. The company's vision is to be the critical, differentiating ingredient in the continuing success of its loyal customers. At the same time, TTI would like to see its technology and services provide opportunities for emerging tobacco product companies seeking to introduce new products and help transform the market.

Product Development

TTI has developed a two pronged approach to introducing its products to the market. Existing clients with known market objectives will make specific requests for samples to evaluate. The evaluation process varies depending on the size and location of the manufacturer. From the time the request is made, TTI guarantees a speedy turnaround. After the flavor is applied, tested, and approved by the client, TTI will provide appropriate formula disclosures as required.

New customers or existing customers contemplating a new product can initiate a Project

Request. A Project may involve the development of an entirely new flavor or request to achieve "something like" an existing taste experience. In this case, traditional style flavors can be sent out as samples or TTI can work to achieve a taste based on a sample end product (cigarette, cigar, etc.) sent by the client.

Quality Control

To ensure the highest quality, TTI uses a customized version of Batchmaster Platinum, a production and procurement program that has the capability to track raw materials and sales orders as they are processed through each department.

"It's a very elaborate system," says Tom Cravotta. "Before it will allow a batch to be made, it verifies that each and every component of that compounded flavor has been approved.

"The bottom line is that with the pedigree of every flavor we ship from this building, we can tell a customer exactly what lot of what raw material it came from. Conversely, if we discover — and we've never had this happen — that a defective raw material got through Quality Control and was subsequently compounded into batches for different customers and different products, the program would tell us exactly where that raw material went. And we've passed many audits from many customers. I can't tell you who, but if I did you'd be impressed."

"We have 100% traceability of everything," says George Cassels-Smith. "In fact, many large industry players have looked to TTI to help them develop their Quality Control because of our expertise in this area."

Technical Services

TTI views its portfolio of technical services as part of its investment in the market for its clients, and will offer these services as part of each project undertaken at no additional cost. The development of a trademark flavor is the cornerstone of any manufacturer in the industry. Therefore, TTI believes it is imperative to package these services with the development of any product. Specifically, these services include:

- Leaf Blend Development;
- Flavor and Casing development for specific product attributes utilizing existing equipment and parameters;
- Product Development — TTI will work directly with the Marketing departments inside the manufacturers or as an outsource facility providing virtual product development group for smaller manufacturers;
- Primary processing and manufacturing assistance;
- Information on Burley toasting;
- Flavor development/application training for customers;
- Knowledge-sharing of world tobacco markets requirements.

Worldwide Presence

TTI's flavors can be found in smoking products throughout the world. Through its relationships directly with indigenous manufacturers or multinationals, TTI is active in 36 countries. For the most part, TTI's presence aligns with the presence of these multinationals, which naturally follows patterns of consumption. TTI is actively developing its client base in these regions through its own sales force and agents who act as intermediaries to accommodate local market conditions.

and diversified products, such as apple and peach. And I see that trend continuing. Water pipes are becoming more popular and these tobaccos are very distinctively flavored and they require lots of flavoring. For that matter, kreteks and bidis, which were traditional smokes in small geographical areas, have gained worldwide acceptance and these products are uniquely flavored and require more flavorings.

Are there any other flavor-related trends worth noting?

George Cassels-Smith: The cigarette industry is reducing the number of additive components. This has created a challenge for tobacco product development personnel.

They must design new flavor systems with fewer ingredients while maintaining consumer acceptance. Consequently, cigarettes have become very similar from manufacturer to manufacturer and from country to country. The cigar industry, on the other hand, has embraced the idea of "the new product" and has shown diversity to their consumers, and they have developed many distinctively flavored products that have caught on. Now the cigarette industry is taking note of this.

Another trend is that selective filtration can be used to remove certain identified harmful substances in cigarettes. However, this always has a net effect of removing some aromatic materials and that needs to

be compensated for by using a tobacco flavoring system. The flavoring system replaces something that's been removed with something that has that same flavor profile but not the harmful components and effects.

Can you comment on how legislation has changed the way manufacturers use flavors?

George Cassels-Smith: Manufacturers are critical of each and every component they use. They continuously strive to do "more with less". This is one aspect that separates us from our competition, in that not only does legislation vary from country to country, but it also varies amongst the manufacturers themselves. Manufacturers don't

Clockwise from top left: George Cassels-Smith, director of sales, USA, and c.e.o.; Tom Cravotta, president, TTI USA; Jimmy Wu, president, Asia-Pacific; Ms. Ayse Adams, director of sales, Middle East; Richard Howell, vice president, manufacturing; and Jack Rothenhoefer, senior flavorist. Below: The TTI tasting room, where new products are sampled and analyzed by the staff.



trust just any flavor provider or the new start-up mushroom company with their flavor and product development projects unless the company has a track record worthy of being trusted. TTI has that track record. TTI deals with products from all over the world

In countries where tar and nicotine content are being reduced, can flavors fill the gap?

George Cassels-Smith: They're probably the best tools. The traditional way of decreasing deliveries is to add byproducts, which add negative effects to the smoke characteristics. Flavors are best utilized to fill in the gap to make the reduced tar product seem like the original product. The proper flavoring of byproducts is extremely important, especially when the other popular reduction method is through the filter. There again, you need to have to proper flavor matrix set up to compensate for the ventilation and filtration.

How do the needs of small- to medium-sized manufacturers differ from those of the large manufacturers when it comes to working with a flavor company, and how is TTI suited to fulfill the needs of both?

George Cassels-Smith: The larger companies know the processes and they want certain flavors to fill certain requirements, whereas the smaller companies have limited know-how and they need flavoring and processing experience. So the request from a more established customer tends to be much more specific. TTI works with all types of manufactures and our policy has always been not to discriminate based on the customer volume requirements. If you're going to support the industry, then you've got to support everybody.

Tom Cravotta: The biggest value TTI offers the industry is its expertise in tobacco processing, blending, and the entire development process, as far as getting a product into a pack and to the consumer.



Tobacco Technology, Inc.'s headquarters in Eldersburg, Maryland.

