



Health and Protection, Rest Easy

**Challenge and Opportunities
Report**

Levant: Challenge and Opportunities

I interviewed several individuals regarding the Levant moisture venting system. I have developed Levant to abate and dissipate moisture that collects on the underside of mattresses typically in humid regions.

Feedback Interviews to Levant Concept

Ryan Mead

Assistant manager at Ashley home furniture (Retailer Perspective)

"I like the system, it seems simple and straightforward. I think I could easily sell this item in conjunction with a mattress purchase based on its features, but its presentation needs some polish before it's market-worthy in my opinion".

"I own a Tempur-Pedic and I know they're prone to mold. I would totally get one for peace of mind."

Questions and Concerns:

- What will it cost to make and sell?
- How long will it last?
- Would it have a warranty?

Insights & Suggestions:

- You need to make it more attractive. It makes it easier to sell.
- Would it work on couches and other furniture that have padded seats?

Takeaways:

Ryan, like others I interviewed, was supportive and genuinely interested in Levant and sees the value in what the product potentially offers. I loved his suggestion that Levant could also be used on other furniture like chairs, loveseats and sofas that are also prone to moisture damage.

He is also right that the product's presentation needs work so that it is more marketable. I do have concerns that introducing a thin casing around the pad could

1. Inhibit the moisture wicking properties of the wool if the casing doesn't share that property.
2. If the case is made from a moisture wicking material what will that add to the cost of manufacturing, Will it be cost prohibitive?

Ryan also brought up the notion of a warranty. I'll cover my thoughts on warranties' later in this document in a more appropriate section.

Ryan was enthusiastic, and was curious what it would cost to make Levant and what the price point for sale would be. This is a question that came up in many of the interviews. It's encouraging because it says that potential users are sold on the product features, it's now just a question of are the features worth the cost?

To this point, it becomes obvious to me that I need to start looking to building a prototype to gage the costs and potential gains in the development and production process. Only by doing that can I even begin to answer this question with confidence.

Bryce Smith:**Co Owner of Prolab Studios (Manufacturing perspective)**

“Of all the product ideas I have seen working here over the years, this is one of the better ones and definitely one of the most feasible. It’s all existing tech. The only R&D needed is figuring out the loads for your vents”.

Questions and Concerns:

- Think about width limitations, most bulk felt seems to max out at around 36 in.
- Would the odor absorbing properties of the silica and charcoal negate the Cedar oil?
- We would have to work out the vent distribution to felt so that it holds its form and doesn’t collapse under pressure.

Insights & Suggestions:

- Try to avoid extreme custom manufacturing setups. This will raise your production cost. Work within the manufacturers conventions whenever you can.
- Boring the vent holes will probably triple your costs.
- Felt doesn’t come much thicker than ½ inch. Thicker than that would be an unusual thickness and cost more.
- Consider forming the vents in a 2 half process and then glue them together.
- Using felt is a good idea for this it’s ridged but flexible and has wicking and breathing properties.
- You’ll likely have to go out of the country to find an affordable manufacturer of felt products.
- Because you’re not making a health product that is consumed or applied directly to the skin you don’t have to prove your claims regarding the essential oils in the matt.

Takeaways:

My time with Bryce was probably some of the most valuable over the course of this assignment. His production insight was excellent and I have decided to alter course and incorporate his feedback on a few points.

Based on Bryce’s feedback I think it’s better to form Levant out of two ½ formed sheets of felt that would have arches formed into the surface and then glue the two sides together to produce vents in a now 1 inch pad. This accomplishes the same outcome while reducing the expense and waste associated with removing material to form the vents and forming an unconventional sized piece of felt.

By that same logic it’s probably best to limit the production sizes of Levant to 3 archetype dimensions that would be able to fit any size of bed individually or in combination: 38x80 twin, 54x75 Full, 60x80 Queen. Two 38x80 would accommodate a King sized beds dimensions. The Full and queen sizes concern me because of the customer setup Bryce warned me of but I don’t see a way around offering these discreet sizes yet.

I am concerned about the tea and cedar oils in the fibers getting negated by the properties of the silica and charcoal. Even though I’m not legally bound to guarantee the effectiveness, I do want it to work the way I anticipate it should.

Danilea

Miami Mold Specialists, Mold abatement and reclamation specialist miamimoldspecialists.com

“Your product sounds like a good Idea, assuming the moisture has someplace to go, you can’t displace moisture in a place that has 100% humidity”.

Insights & Suggestions:

- Anytime the AC isn’t working the way it should you will get mold, all you need is heat, moisture and a food source for it to grow.
- Mold prefers to feed on cellulose, cotton and dead organic cells plant or animal.
- We see mold on and under beds every day.
- Mold will grow anywhere it’s warm and moist.
- If your product works the way you explained it would probably help save some mattresses.
 - Assuming the environment the bed was in was completely saturated, moist air can’t escape to moist air.
 - In that scenario its likely mold would be growing on your pad too.
- Most people aren’t covered for moisture damage. A lot here are covered for flood but that’s different and never covers the complete cost of the flood for the home owner.
- Mold abatement and removal is a big business in Miami
- Hotels do frequently have problems with mold.
- Most people get rid of their mattresses after a mold issue in the bedroom.

Takeaways:

My call with Danilea was productive and informative. She thought it might be a good short term defense against mold under the bed. But she also revealed how insidious mold is in warm, humid regions. This chat confirmed my thought that not only does Levant need to capture and vent moisture away from the bed surface it also has to have some anti fungal properties to prevent molds growth in the first place. This makes the use of tea tree and cedar oil more important and makes me wonder if I can get oils in a solid pellet form that might release the vapors more slowly and consistently over time. I would use the pellets or cedar shaving like the silica and charcoal, embedding them in the fibers of the matt. I would still saturate the fibers of the matt with oils as well.

The fact that moisture can’t escape if it has no place to go has also lead me to the notion that I won’t offer a warranty with the product at least until I know more about how it performs in the field. There are too many variables tied to peoples living environments and lifestyles to make a broad claim of effectiveness. I think a well-worded piece of advice regarding moisture abatement on the packaging might be a better route.

I was glad to hear about the frequency of this issue in Miami and by extension other humid areas. It confirms my theory that this is a product that could save people from short-term accidental increases of moisture in their environment, potentially saving their Mattress, Money and Health while they fix their AC or vent out the large amounts of excess moisture. To that end, this conversation has also shown me how I need to go about marketing Levant as an everyday defense against moisture abnormalities in your Home. It won’t stop a systemic moisture issue but it gives you time to do something about it before it ruins your Mattress.

**Jarrett and Brittany Hansen,
(Soon to be newlyweds) Private Consumer (Early adopter)**

“It sounds good, like something most people would want, but I can’t see spending a 5th or 6th of what we planned to spend on a bed just for a pad that will make our Mattress last longer. We will likely by another new mattress again in a few years anyway”

Questions and Concerns:

- How much would it cost?
 - It’s hard to justify spending \$200 on the pad when you’re only planning on spending around a \$1000 on the bed.
 - But I would definitely get one if I was getting a real expensive bed.
- Could I wash it? Or clean it?
 - Would it work as well if I did clean it?
- How long will it last?
- What bugs would the oil repel?

Insights & Suggestions:

- Maybe you could make a lower end model with fewer features to make it more affordable?

Takeaways:

Jarrett and Brittany are typical first time shoppers for a mattress and their questions were representative of their demographic. Given their current priorities, logistic and fiscal, this version of Levant isn’t something they would see as a priority. Even though they said if they were spending more on a mattress they would get one as insurance against mold. That said, it made me think how I could make a simple version that could offer some of the benefits at a lower cost. The easiest way would be to sell a thinner sheet of felt that still have the oils, silica and charcoal in it but lacks the vents. This might reduce the cost enough to make it attractive to an entry level consumer.

I’ve covered their other concerns associated with cost above in Bryce and Ryan’s sections respectively. Also as I mentioned in Bryce’s section I need to build a prototype to prove out some of the physical issue questions. Felt is known for its durability. It has several industrial applications including roofing lasting 10-40 years in that application. I have no question that Levant will last longer than the average mattress it was bought to support. Because Levant can be rolled up it’s easy to take it to the cleaners every few years for a steam treatment. That said, I don’t know how time and cleaning will affect the oils and materials held within the felt, this is another aspect that needs to be researched and tested.

All essential oils have antifungal, bacterial and microbial properties with tea tree oil being recognized as one of the most effective. However when it comes to repelling bugs, oils are less universal and choosing a effective combination that is pleasant to smell will be more challenging. To address this I have done some research on oils and what pests are repelled or killed in their presence. I have included a table on the following page. Presently I’m leaning toward an additive mix of Silica, and Charcoal, Cedar, Lavender, and tea tree oil. As this combination would cover the majority of pests including bedbugs, absorbed moisture, and discourage the growth of fungus and bacteria.

Natural additives and reported benefits																
	Moisture	Fungus	Microbial	Bacteria	Flea	Mosquito	Ticks	Lice	Bedbugs	Flies	Ants	Cockroach	Termites	Moths	Spider	Others bugs
Cedar																
Tea																
Camphor																
Lavender																
Peppermint																
Orange																
Cinnamon																
Eucalyptus																
Clove																
Silica																
Charcoal																

This table was composed using multiple sources including academic, professional and enthusiast reference points that are cited in the source section at the bottom of this report.

Zachary Hassall
Grand America Hotels (Head of Renovation) Commercial Consumer (Early adopter)

“Sounds like you have given it a lot of thought and if any of my hotels had mold problems this would be worth a look”

Questions and Concerns:

- I don’t have to deal with mold issues in the region I handle

Insights & Suggestions:

- It’s cool that it would repeal bugs that might be something that would be useful here in San Diego and other parts of my region, but not in my hotels 😊
- I’ll try to put you in touch with the head of guest services; she might have a better overview of our pest and mold challenges.
- I’ll ask some industry friends from the east if they could field your questions.

Takeaways:

I think if I was able to get in touch with Mr. Hassall’s counterparts in the east it would yield some great information that would help my product development, but to date I haven’t heard back from him or any of his associates. The feedback I did get from him was polite but it didn’t add any new vectors for me to consider. Unfortunately this proved the case when I reached out to a few other hotels in the Miami area no one could answer my questions about mold because of legal and PR issues. I got a similar response when I contacted State Farm to see if they could share data with me regarding the number of claims that were made in association with mold damage. But hitting dead ends on these to avenues lead me to contact Miami Mold Specialists and that was fantastic source of information to help me understand how prevalent and problematic mold is. All that said, I hope to hear back from Zachary or his associates in the future because I would love to get a bulk, commercial consumer’s perspective on Levant.

The one useful piece info that came out of my correspondence with Mr. Hassall was that the moisture abatement approach loses its appeal in arid regions and that it's anti-pest properties of the essential oils should be emphasized when selling Levant to this region.

World Café feedback (ENTR 2500)

Questions and Concerns:

- How would it be packaged and sold?
- ~~What would it cost to make?~~
- You're missing an "L" in Health in your presentation.
- Would it attract bugs, with it being made of wool?
- ~~How long would it last? Can it be cleaned?~~
- What can this do that a box spring can't?

Insights & Suggestions:

- Could Hospitals, and rest homes benefit from this as well
- Would hotels be interested?
- ~~Would you make the product more attractive with a cover of some sort?~~
- Could it have other scents besides Cedar

Takeaways:

World café and my chats with Dr. Gough have yielded some great questions and suggestions I have crossed out feedback that has been addressed above this section so that I can focus on the unique items that I discovered through the World Café.

I haven't given a lot of thought concerning how Levant would be packaged and shipped. The question is thought provoking, the only way that makes sense is to have the pad firmly rolled up, but not so much that the cells in the pad compress. Felt holds its form exceptionally well but it can take on a new form memory if it is deformed for extended periods of time. For this reason we can't fold the pad or compress it tightly. With all that said I think a simple plastic bag with graphics makes the most sense with the brand information being on the long side (vertical and horizontal) and one end so that it's flexible for different presentation scenarios. The pad itself would be bound by one or two cardboard rings inside the bag so that would keep it contained and snug, but not compromise the felt form. Though this approach makes practical sense, I'm concerned the simple plastic bag might send the wrong message that the product is cheap. If that is the case a boxed approach would need to be considered.

I don't think the wool attracting pests is going to be an issue after the silica and essential oils are bound to the fibers as mentioned above. I think the compound of Silica and Charcoal, Cedar, Lavender, and tea tree oil will deal with most common bugs that are found in homes and the bedroom.

Box springs only deal with air flow. They don't have features that deal with mold and pest directly like Levant. Also, the ridged frame of the box spring will not accommodate the new adjustable lifestyle bed platforms. Levant, being felt, can deform with the platform and mattress while retaining it's air flow and introducing materials to combat moisture, bacteria and fungus as well as repel or kill a variety of pests that might try to invade your sleeping area.

The suggestion of Levant being used in hospitals or care facilities is inspired. I'm presently looking to get some feedback from a senior level nurse at Utah Valley Medical Center where she teaches and trains nurses and by chance her husband was the administrator over a seniors care facility. I believe this interview will give me some additional insight into how the medical profession approaches containment and elimination of microbes, funguses and bacteria as well as giving me more insight into the health risks associated with these threats.

As I mentioned above, I think hotels would be a great place to use Levant but I am presently still looking to find a collaborator from that industry that can provide me with thoughtful feedback.

I think the Idea of more dominant scents is interesting and the concept of matching a scent to a person's preference might be an interesting avenue. But that would hinge on whether the silica and charcoal would absorb the stronger portions of the scent. Ideally I think the scent shouldn't be strong enough that people have an opinion one way or another. In my mind it should be seen as utilitarian and appreciated for its unique virtues rather than a notion of fashion. Writing this I also think the oils need to be approached carefully and judiciously so that Levant is only alleviating issues and not creating them; on that note, I need to look into essential oils and allergies.

Along those Lines it's also worth mentioning that essential oils are not regulated by the FDA and many make dubious claims on what the cure-all can do. This makes discerning reliable information from frivolous claims difficult so I have included the reliable sources I did find and will continue to look for more reliable information on the oils and their properties. Presently it's incomplete and in an exploratory phase.

Summary of Action Items from feedback

My immediate Focus will be on the following three tasks.

1. Build small section prototypes to figure out what the vent to support ratio of the felt pad is.
 - a. This will help me work out the physics of the product, as well as give me insight it to the cost of manufacturing and if a less expensive and involved version would be worthwhile for lower end beds.
2. Do further research on essential oils; find reliable research that proves claimed properties of veracious users and groups on the internet.
 - a. As Bryce said this isn't strictly necessary as the claims of products that aren't ingested or applied to the skin don't need to be proven. That said, I want to make the best product possible and I want to believe in what it claims. I also don't want the liability of or guilt with someone dying from an acute allergic reaction.
3. I want to explore getting a provisional patent.
 - a. This started as an assignment but after conducting these interviews I think people are genuinely excited about Levant and its possibilities.

Additional tasks for the future

- Interview Health care professional about medical potential of Levant in hospitals and care facilities.
- Interview a hotel rep associated with maintenance and/or hotel liability or PR.
- Create some packaging concepts.
- Look into synthetic alternatives to essential oils that accomplish the goals of fungus, bacteria and pest abatement without the costs of side effects or allergens of naturally sourced oils.
- Find more information on felts durability.
- Look into felt blends Cost vs. Effectiveness, Pros and Cons

Needed skill sets for my team

In my original proposal I structured my team and the associated cost according to my experience in large corporations with full time employees and head count. Bryce Smith at Prolabs studios really opened my eyes to the alternatives in staffing and getting the people I need for this project. Rather than hiring FTEs I will look more in to as needed short term contracts to fill my needs as they arise. This will be particularly true in employing a material scientist to help my figure out the felt to vent ratio of the matt. Packaging design can also be accomplished through short term contracts rather than building a full time staff. In short I'm going to look more to working with needed skill sets from a contract or hourly rate arrangement as opposed to a salaried FTE. This will also make it so that I don't have to give up a portion of the company to any expensive specialists to make up for a sub-standard salary in a startup. Really all three of the positions I identified in my proposal can be handled as ad hock contracts even legal services can be handled that way as well.

Summary statement

This exercise surprised me multiple times with the unexpected new avenues each interview opened up to me, forming alternant designs and manufacturing approaches to potential users and lines of revenue I hadn't considered. It was also fun and exciting to share my idea with others and see them get excited not just for me but for this simple idea that no one had considered before and appreciate the problems it addresses. It's been a rewarding experience and I plan to use this approach with any creative endeavor I approach going forward. I look forward to implementing the feedback into my idea and discovering additional feedback to improve the concept further.

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