Bar-I-Fication of Stimulus

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Covid led to the pressing need to explore alternate methodologies. Within this, H2H (house to house) methodology gained prominence as the apt approach for migration of stimulus intensive researches from CLT (central location testing)

Bar code scanning - an automated technology based solution for stimulus management, in this context was the need of the hour as it is easy to implement and solves operational complexities in H2H approach. It not only enabled business continuity during pandemic, also helped lay robust mechanism for real-time process management for stimulus intensive research. We want everyone to make use of this simple effective technique

Reflection – Status quo before Covid

Bulk of the work in market research industry is executed around product which makes product testing a corner stone for the industry. Historically - design, statistical and analytical challenges have been the core focus while setting up and exploring solution for product tests. But the truth is that for product testing or any stimulus intensive research the core lies in how well stimulus management is handled.

Stimulus management is an area which is handled and executed by the operations team and a lot of thought and time is not spent on this compared to time spent on designing the experiment. Relative to the other core aspects of the experiment it is assumed more like a hygiene aspect which is taken for granted from the perspective that it will be in place and that it is the sole responsibility of the agency handling the experiment.

But the fact is that truth lies in details! Hence the strength of a protocol or experiment lies in correct stimulus exposure. We often come across with highly decorated theories and methodologies for research design and approach. But the locus or ground reality lies in how well the study is executed in real - on ground.

There are lot of cases where stimulus exposure is routine & protocols are simple, so it is easy to conduct the experiment in the right way. However, there is a lot of complexity around stimulus handling in many other cases. Multiple products/ stimulus, specific steps to be followed before handing over product/ stimulus to respondent or along the enquiry process, complex sequence of exposures etc are instances were control and supervision take centerstage and is mandatory.

The complexity doesn't end at the process but increases with the fact that we rely on interviewers for these protocols to be executed. These are a pool of modestly paid freelance resources who enable us to conduct the study but also make for the weakest link in process execution. But this is no new news, this has been discovered and realized in the past many times.

This is the biggest challenge known to all in industry but it is not acknowledged openly (we fail to concede to it openly). There are many unidentified misses in stimulus handling. For any erroneous execution in stimulus administration we expect it to smoothen across the size of sample. And we often overlook or tend to not care much about this fundamental element of any stimulus response study, which is the need to 'expose the right stimulus'.

Central location testing hence evolved out as the relatively ideal platform which ensures most of the dynamic variables which can influence and impact the experiment results to be controlled from one location. With CLTs we willingly trade-off the benefits of realistic home situations against additional supervision, monitoring and administering the study with a stricter control.

Fauda – Chaos

Pandemic disrupted the comfort zone of operating these experiments through central location testing and pushed us to explore and execute the established protocols using alternate methodologies. Our situation was sensitive as business highly leaned on product testing studies. But due to the complexity of protocols that we run for our key client we had to resort to options other than CLTs for execution of product test studies.

With a significant amount of stimulus based testing shifting from central location testing to house to house, the need of the hour was to ensure similar levels of control and supervision as facilitated by central location testing set up. Higher complexity/sensitivity existed around designs which involved multiple panels where more than one product is consumed/ pack is evaluated by the respondent – stimulus handover and administration becomes chaotic and it is extremely critical to have complete control on this.

Therefore, we were pushed to think beyond the current and we discovered is this new way of stimulus administration and maintained our commitment towards efficient and effective operational management.

On the ground challenge – executing product test in-home

At central location venues, handover of the product as per the panel is facilitated by the supervisor or the designated field personnel at the venue. Clear instructions are detailed by the researcher in the field briefing note to ensure the right stimulus is exposed and handed over to the respondent. With the shift in methodology to house to house considering pandemic, while the detailed notes and documents were still shared with the field teams- there was a need to close the gap on stimulus exposure – largely as it is trust and belief on which this part of the process has been running for decades.

With a limited window available for interaction with respondent in a crunched space maybe outside or inside the respondent's house, managing & handling of multiple stimulus with the required protocols using a single interviewer's bag was very challenging. This posed a larger possibility of product/stimulus swapping in due process, specifically for researches where order of product exposure is critical.

This challenged us to quickly come up with a solution which should be an operationally grounded approach that can be amalgamated with the existing protocols as the overall design could not be changed. The risk was high as it directly impacted business and so it required an error free solution. We therefore aimed for a 100% error free solution which could run seamlessly with the existing protocols and fit for studies with multiple panels & products running across multiple centers. While as optimistic it sounds, it did involve solving for multiple aspects & layers through numerous iterations and pilots to get to where we are right now.

The Journey - multiple methods explored

We explored multiple methods with the focus being error free and technology based approach for real-time solutions for efficient stimulus management

The first approach involved asking the interviewer to enter the code of the stimulus. The script would proceed further only when the right code is entered as per panel. This worked however we still required evidence of whether the right product is handed over to the respondent. Hence to strengthen the process further we tried out photographic evidence by clicking and attaching the image of the stimulus as CAPI platform enables image capturing.

Pictures were clicked before continuing further with the enquiry before all critical stages like shelf exposure, monadic evaluation and diagnostics. But with photographic evidence based approach there were multiple challenges as these pictures had to be verified for accuracy basis the respondent's panel and order of stimulus exposure at the back-end once interviews were synced. Considering the network challenges in different areas of the city, interviews are not synced real-time hence we experienced lag at the first step of verification. Added to this, these checks were time intensive and relied solely on human intervention.

Cancellations basis manual checking and verification led to an extension in overall fieldwork time and the room for manual error was always open. Hence, we required an error free and faster approach. We again started exploring other options to see if anything else can be done, as we always had the option of supervised placement. But this too comes at a high cost & time investment.

Our focus was 100% error free, technology based solution which could ensure automated stimulus exposure and management in real time. Hence, we kept exploring options.

As a part of the journey we knew, there are multiple technology based approaches which could best fit our challenge. Post multiple rounds of brain-storming sessions to handle stimulus in a controlled & process oriented manner, we zeroed down on technology backed solution like RFID, QR code.

We thought to embed RFID chip on the stimulus to track and check for stimulus accuracy during enquiry execution. While it is a scientific solution there were some limitations in its implementation. For RFID, not only a specific device like a RFID reader is required to read the

tag but also advance technical knowledge is mandatory for tag creation. And all this comes at a cost in the form of hardware or resources.

In the tracking space, we also explored the latest in trend 'QR code'. While QR code is just a matrix barcode and its creation is simple but current infrastructure did not support the scanning & code reading requirements

Covi-reka

The idea of tracking led us to the thought of parcel/package tracking system. And that is how the idea bubbled. We traversed the basic grammar of retailing and looked for the aspect that carries the maximum information in retailing network, "BARCODE". This is how the genesis of this solution happened.

We initially thought of scanning the barcode which is on the product itself and get the details basis that. But this involved cross checking with client on details specific for each brand at sku level, would not work for test products which are couriered by client, also competition product details will not be accessible

We finalized the current barcode system because we figured out that our current enquiry conducting devices and the platform on which the investigation software runs can process barcode data. Additionally understanding that barcode generation is a very simple and easy process and that barcodes can be generated free of cost & easily printed as stickers on the stimulus gave us added motivation to go ahead and explore the idea.

Therefore, we finally resorted to custom barcode creation for each study and to ensure 100% error proofing, we enabled the enquiry script to continue further only if the correct barcode is scanned. This system ensured automated & real-time validation, correct allocation of products and adherence to protocols in totality.

The JAAB - Barcode

Bar-Code generation

The process of barcode generation is very simple. This code is a mix of alpha-numeric characters. The product codes are set and shared by the researcher with the scripting team, who in turn converts the codes into 'barcode format'. After this the scripting team programs the logic for checking the designated barcodes post scan at backend of the script

These fresh barcoded product codes are shared with the field along with details like product/stimulus name, picture, etc. to ensure there is no confusion. The barcodes are then printed on a sticker paper and pasted on the respective stimulus by field. All this is done in just a matter of an hour with no additional investment of any sorts. Each barcoded stimulus is individually checked by research & field teams before the stimulus rolls out to interviewers on field.

Bar-Code Implementation

The scripting or data collection platform has in-built barcode scanning capability for automated stimulus validation. Each key stimulus is assigned a unique code and the same is encrypted in a bar code using software. These bar codes are then printed and put as stickers on the respective stimulus. During the enquiry, at the appropriate stage before the stimulus is exposed to the respondent, the bar code on that stimulus is scanned and checked in real time.

Depending on the accuracy of the code the survey script prompts for further enquiry. If the bar code scanned is incorrect, the survey script either throws an error message and alerts the interviewer to show the correct stimulus or goes on auto-termination mode.

Field is well guided and trained to use the barcoded stickers as per the actual product codes. Field scans for each barcoded stimulus with the help of an automated link, the data collected from this scan exercise is verified/validated by researcher. All this is conducted as a part of the field briefing over a video call. As a part of the actual fieldwork, the script is enabled to check these scanned barcodes in real time with the actual code. In case of any mismatch, based on the nature of the research the script shows an error or termination.

Data capture at the backend records each scan and ensures 100% error free exposure

	QPANEL	Shelf_exposed	Barcode_Scan_Shelf	Product_exposed	Barcode_Scan_Product
2					
3	Panel A	ShelfA	Shelf_A	Product 1	BT0
4	Panel B	ShelfB	Shelf_B	Product 2	BT0
5	Panel C	ShelfC	Shelf_C	Product 3	BT2
6	Panel D	ShelfD	Shelf_D	Product 4	BT3
7	Panel A	ShelfA	Shelf_B	Product 1	BT0
8	Panel B	ShelfB	Shelf_B	Product 2	BT1
9	Panel C	ShelfC	Shelf_C	Product 3	BT1
10	Panel D	ShelfD	Shelf_A	Product 4	BT3
11	Panel A	ShelfA	Shelf_A	Product 1	BT0
12	Panel B	ShelfB	Shelf_B	Product 2	BT1
13	Panel C	ShelfC	Shelf_C	Product 3	BT2
14	Panel D	ShelfD	Shelf_D	Product 4	BT3
15	Panel A	ShelfA	Shelf_A	Product 1	BT0
16	Panel B	ShelfB	Shelf_D	Product 2	BT1
17	Panel C	ShelfC	Shelf_C	Product 3	BT2
18	Panel D	ShelfD	Shelf_D	Product 4	BT3

Implications – Out of adversity comes opportunity

Though we started on this for one of our key client under duress but we are thrilled about this simple yet powerful solution. And the most important aspect is that we could deploy something so accessible and fool-proof which can be utilised by everyone in the industry.

We have used this solution for over 5000+ interviews across study types and for different clients. It is useful not only for product/pack test studies but widely used across low contact product testing, concept testing studies.

The benefits of this are not limited to only stimulus management but can be extended to other researches as well. Apart from screening the code stuck on the stimulus, the technology enables capturing the barcode on in-market products. And this functionality can be used for Retail Audits for Pack/Brand verification in store, Shop intercepts/Exit interviews to capture the client brand with exact SKU, Price specifics, Brand verification in tracking & post launch evaluation where capturing the product is critical to data credibility – the technology can be used for capturing the code on the pack. The codes can be passed onto client for internal verification and validation.

With this simple approach of stimulus management secondary benefits can also be derived, like providing a unique repository of codes for test product which can be a handy database for client.

At the core of it, the critical benefits are it avoids wrong stimulus placement, it doesn't need any investment and comes with a free of cost implementation, easily adaptable technology – agency agnostic

With newer ways to collecting data from respondents this technology can be used in situations where self-administered enquiries need to be enabled to ensure correct product/ stimulus is received by the respondent, correct order and process is followed in the enquiry.

As researchers, we are always looking for complex designs or analyses for inspiration. Pandemic has wreaked havoc in all our lives but it has also pushed us to the corner where we have been constantly innovating and evolving. But had there been no pandemic we would have still relied on the supervision as highest level of process conformance.

Sometimes, simple solutions provide ultimate sophistication. Barcoding technique for stimulus management is simple, provides better logistical control & is frugal, something so basic and scientific that all clients will like to implement.

We were fortunate that 'Barcoding of Stimulus' worked well and we could get a 100% error free solution. The solution came right in time and we could maintain business continuity along with earning trust from client. We are hopeful that everyone can make the most of this solution and it becomes an industry wide norm/standard

References

- Idea spurted as a fallout of multiple discussions with our client

- We are more than indebted to our scripting, data processing teams to be willing to hear out our idea and collaborating to run multiple pilots

- A special mention for anchors of data collection activity – our field teams to be patient enough to execute the idea

- And yes, the wide spread bar code generating platforms which made this happen

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