Product Use Behaviour (PUB) Sub-Group

2019 Annual report

Coordinator: Dr Krishna Prasad (BAT)

Secretary/ SC Liaison: Dr Xavier Cahours (IMB)

07 October 2019

Hamburg, Germany

Product Use Behaviour Measurements

As part of the existing and emerging regulation for introducing NGPs

- Number of Product Use Behaviour measurements required:
  - Sensory Experience
  - Level of consumption
  - Puffing Topography
  - Intention to use/quit
  - Ability to understand & comply with ‘use instruction’/ potential misuse
  - Abuse Liability Assessment
  - Perception & Comprehension of NGP ‘modified risk communication’
  - Pattern of use

CORESTA PUB Sub-Group: Objectives

1. Critique and review published papers on all aspects of tobacco and related products' use behaviour, and publish in peer-reviewed journals.

2. Examine unpublished reports and work on the subject with a view to recommending publication of suitable papers in peer-reviewed journals.

3. Identify gaps in total knowledge and suggest suitable work to provide the necessary information.

Outline: 2019 Activities

1. eCig literature review – proposals to fill identified gaps
2. PUB-156-NWIP: Abuse liability assessment review update
3. PUB-169-NWIP: VLNC review update
4. PUB-190-NWIP: Formation of CROM Task Force
5. Unpublished reports
6. Next steps

1.0 Proposals to fill the gaps identified

- Comparison of methods /protocols/ devices for vaping topography assessment
- Vaping topography comparison of populations / sub-populations
- Comparison of vaping topography for different products
- Topography assessment with heated tobacco products
- Assess the Product Use Pattern of heated tobacco products
- Assess the Product Use Pattern of e-cigarettes

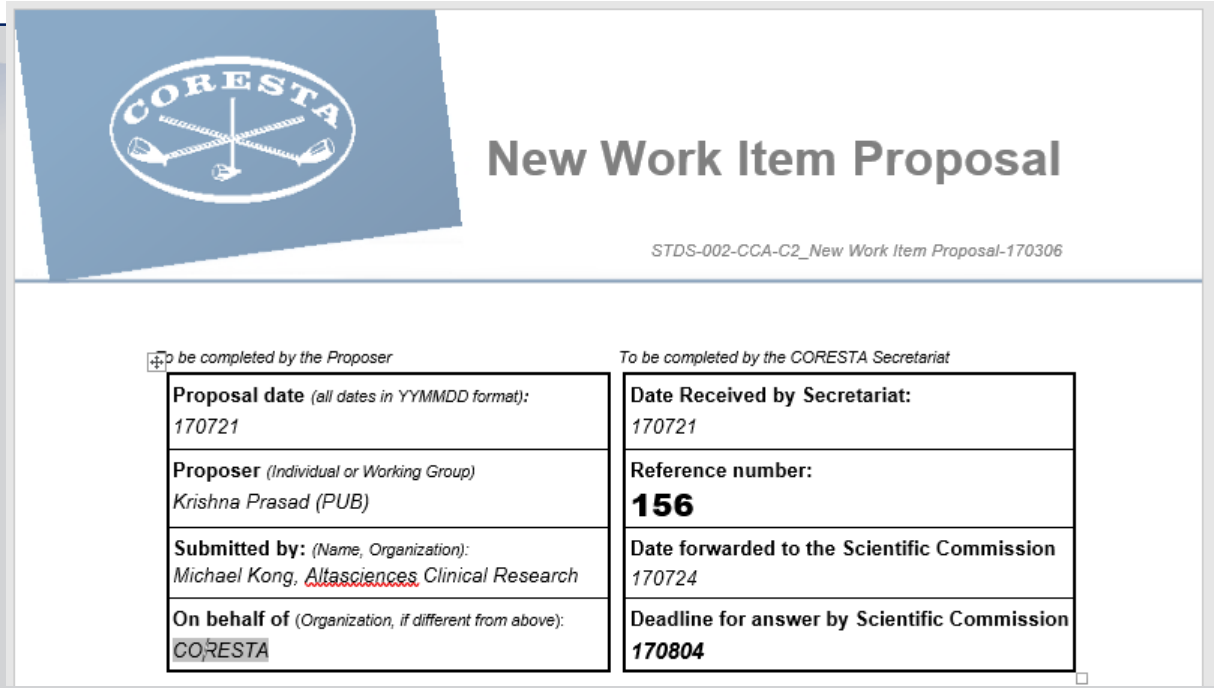
Next Steps

Following a survey of members the following topics have been short listed

- Topography assessment of heated tobacco products
- Product Use Pattern assessment of heated tobacco products
- Product Use Pattern assessment of e-cigarettes

Identify appropriate workstream leads	Q4 2019
Prepare NWIP to design and execute the studies	Q1 2020

2.0 PUB-156-NWIP



New Work Item Proposal

STDS-002-CCA-C2_New Work Item Proposal-170306

To be completed by the Proposer	To be completed by the CORESTA Secretariat
Proposal date *(all dates in YYMMDD format):* *170721*	**Date Received by Secretariat:** *170721*
Proposer *(Individual or Working Group)* *Krishna Prasad (PUB)*	**Reference number:** **156**
Submitted by: *(Name, Organization):* *Michael Kong, Altasciences Clinical Research*	**Date forwarded to the Scientific Commission** *170724*
On behalf of *(Organization, if different from above):* *CORESTA*	**Deadline for answer by Scientific Commission** ***170804***

Review of Human Abuse Liability (HAL) Assessment with Reference to Tobacco and Nicotine Products

Review of Human Abuse Liability (HAL) Assessment with Reference to Tobacco and Nicotine Products

Writing Committee responsible

• Michael Kong	Altasciences Clinical Research
• Andrea Vansickel	Altria Client Services
• Leanne Campbell	RAI Services
• Sarah Baxter Wright	RAI Services
• Neil Sherwood	Independent Consultant
• Sarah Evans	Turning Point Brands

Review of Human Abuse Liability Assessment with Reference to Tobacco and Nicotine Products

Document Outline

- Section 1: Overview of methods for HAL testing
  - Review of current methods borrowed from pharma assessments and unique to tobacco research
  - Relevance of current HAL methods to tobacco products
- Section 2: Industry experience with regulators
  - Section status is being considered, awaiting contribution from members
- Section 3: Role of attractiveness and product appeal in product use and dependence
- Section 4: International perspective on product appeal and abuse liability of tobacco products

Current Status

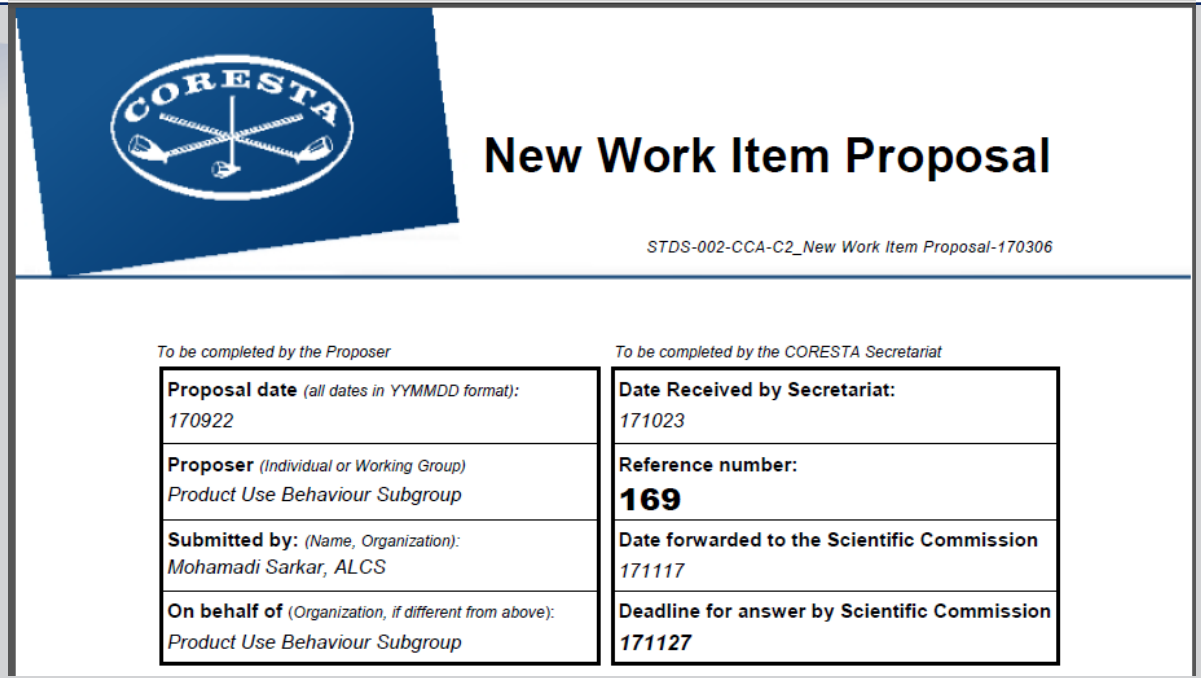
- Individual document sections have been drafted by writing leads
- Draft sections have been consolidated into a single working document and the document has been revised to align information across sections
- Draft document has been shared with stakeholders for review and feedback

Next Steps

- Nov 2019: Draft document reviewed by internal stakeholders (includes time for 2 review cycles)
- Q1 2020: Final document reviewed through stakeholder's required review processes
- Q2 2020: HAL Review finalized and submitted to target Journal

ST12 – Session 3 Today 07/10/2019

3.0 PUB-169-NWIP



New Work Item Proposal

STDS-002-CCA-C2_New Work Item Proposal-170306

To be completed by the Proposer	*To be completed by the CORESTA Secretariat*
Proposal date *(all dates in YYMMDD format):* *170922*	**Date Received by Secretariat:** *171023*
Proposer *(Individual or Working Group)* *Product Use Behaviour Subgroup*	**Reference number:** **169**
Submitted by: *(Name, Organization):* *Mohamadi Sarkar, ALCS*	**Date forwarded to the Scientific Commission** *171117*
On behalf of *(Organization, if different from above):* *Product Use Behaviour Subgroup*	**Deadline for answer by Scientific Commission** ***171127***

To conduct a systematic review of publicly available study designs and methods used to evaluate VLNC in adult users of tobacco products

Writing Committee responsible

• Mohamadi Sakar	Altria Client Services
• Paul Nelson	RAI Services
• Jeff Smith	RAI Services
• Neil Sherwood	Independent Consultant
• Javier Matinez / Kelli Sayers	JTI
• Xavier Cahours	Imperial Brands
• Krishna Prasad	BAT

VLNC Review - Purpose

To conduct a systematic review of publicly available study designs and methods used to evaluate VLNC in adult users of tobacco products

Review Framework

- Does the reduction of nicotine content in cigarettes to a very low level modify cigarette use behaviour?
- Restricted to clinical, behavioural and perceptual studies in Man
- Limited to studies among current cigarette smokers
  - **No studies have been found which examine the effects of VLNC on initiation to cigarette use**

VLNC Review - Method

Studies in the available literature, grouped into four categories:

1. cessation among smoker subjects when switching to VLNC
2. changes in product exposure (e.g. CPD, biomarkers) when switching to VLNC
3. changes in product use (e.g. topography) when switching to VLNC
4. changes in attitudes (e.g. risk perception) when switching to VLNC

VLNC Review - Narrative

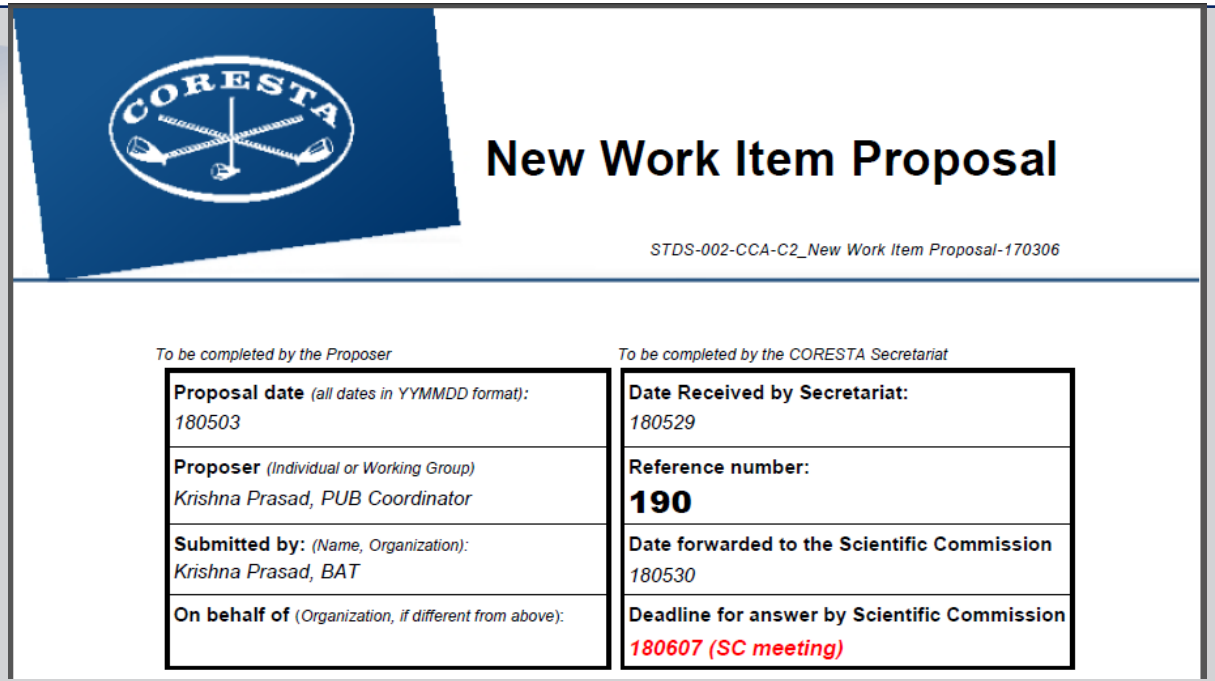
1. Are these studies credible when judged against appropriate / acceptable tobacco clinical study design standards?
   - If so, what conclusions may be drawn?
   - If not, what are the common strengths and weaknesses in these studies?
2. What issues need to be considered in conducting human studies of VLNC and what would an “ideal” study design look like?

Next Steps:

- Final Draft in preparation, followed by team review and submission planned Q1 2020

ST51 – Session 12 Thursday 10/10/2019

4.0 PUB-190-NWIP



New Work Item Proposal

STDS-002-CCA-C2_New Work Item Proposal-170306

To be completed by the Proposer	*To be completed by the CORESTA Secretariat*
Proposal date *(all dates in YYMMDD format):* *180503*	**Date Received by Secretariat:** *180529*
Proposer *(Individual or Working Group)* *Krishna Prasad, PUB Coordinator*	**Reference number:** **190**
Submitted by: *(Name, Organization):* *Krishna Prasad, BAT*	**Date forwarded to the Scientific Commission** *180530*
On behalf of *(Organization, if different from above):*	**Deadline for answer by Scientific Commission** ***180607 (SC meeting)***

Establish Best Practice & Guidelines for Consumer Reported Outcome Measures (CROM) using a Consortium approach

The path towards a CROM Consortium

Kitzbuehl
SSPT 2017
10/07/2017

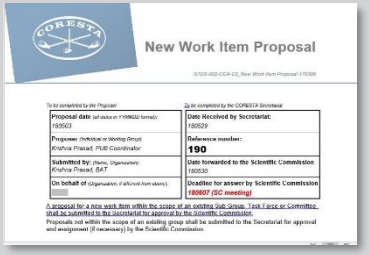
Presentation history FDA PRO guidance

Develop similar project around CROM?

Geneva
PUB SG 2018
04/04/2018

Presentation possible CROM consortium

Create NWIP



SC meeting 06/07/2018 CROM Task Force officially created

Kunming
CORESTA 2018
10/22/2018

CROM TF 1st meeting

Creation of a WG0 and activities launch

✓Clarify goals
✓Oversee devt
✓Prepare work plans

6 TCs
(11/2018 – 05/2019)

Montreal
PUB/CROM TF
05/24/2019

CROM TF 2nd meeting

Presentation of findings (goals, definition, review, taxonomy)

1 TC (07/2019): to refine WG0 work, discuss funding and prepare poster for SSPT 2019 Hamburg

Where are we on WG0 objectives?

1. Clarify the goals of the Consortium, the research questions and the scope of work

✓ Done

2. Oversee the development of the CROM Consortium: governance, structure, budget and funding mechanisms, engagement with 3rd parties

✓ On-going

3. Prepare execution of future phases: work plans, working groups (WGs)

✓ Initiated

Business Case for CROM

CORESTA Consumer-Reported Outcome Measures Task Force

Re: **Proposal for a Consumer-Reported Outcome Measures (CROM) Consortium**

Date: Monday 8th July 2019

Version: final

What is the regulatory context?

To inform their evaluation process, regulatory agencies, such as the U.S. Food and Drug Administration (FDA), have set solid standards on the type of science-based evidence required to demonstrate that a tobacco product can benefit public health. An important component of assessing reduced risk products is to determine consumers[1] risk perceptions, behaviors and understanding of product information communicated by manufacturers. Put simply, this evaluation requires to have in place appropriate measurements of consumer-reported information using validated methodology to satisfy regulators.

What are consumer-reported outcome measures?

Consumer-reported outcomes are data collected by self-report from the subject of research, whether it concerns perceived states, reports of behavior, or the combination of both, and understanding of messages. They provide information only known to the consumer, which would not be obtained otherwise. To support regulatory decision-making, consumer-reported outcomes measures (CROM) should be valid and reliable, i.e., they should accurately and dependably measure what they set out to measure.

What is the rationale for a CROM consortium?

Recent examples of pre-market tobacco (PMTA) and modified risk tobacco product (MRTPA) applications have shown that regulators thoroughly scrutinize consumer perceptions and behavioral studies. Methodological flaws in the selection and/or the development of CROMs can have detrimental consequences and delay any regulatory ruling, as exemplified by Swedish Match North America initial and revised (3 years later) MRTPAs. At the same time, a well-developed measure to assess risk perception of addiction helped to support FDA's decision to recommend a health warning on nicotine addictiveness to be added on IQOS packaging.

Since November 2018, a Task Force (TF), created within the CORESTA Product use behavior (PUB) subgroup, and including members of 8 tobacco industries, has been working on the foundation of a consortium to establish best practices and guidelines for the integration of CROM in the tobacco regulatory process (see list of the TF members in appendix). During the last face-to-face meeting on May 24th, 2019, two main conclusions were made by the TF:

1. There is a need to harmonize and standardize the field of CROM in tobacco regulatory science and to reinforce the standards for the development and validation of these measures;
2. This issue can only be resolved through a better collaborative effort between tobacco companies, regulators and academic researchers.

By setting up a CROM consortium, we propose to leverage from a similar effort many years ago in the pharmaceutical world where academic researchers, regulators and drug manufacturers worked together under the patient-reported outcomes (PRO) Harmonization Group to provide the foundations for a regulated use of PRO in labelling claims[2]. The PRO Harmonization Group was instrumental in achieving a milestone in drug development, and in opening the door to patient-focused drug development[3,4], i.e., a systematic approach to help ensure that patients' experiences, perspectives, needs, and priorities are captured and meaningfully incorporated into drug development and evaluation.

What is the objective of the CROM consortium?

The main objective of the CROM consortium is:

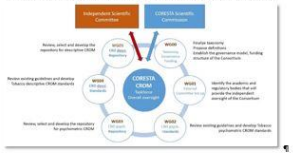
- To provide guidance on how to develop, validate, identify, access and use CROM to evaluate tobacco and nicotine-containing products for pre-market and post-market purposes:
  - By reviewing existing standards on the development and validation of CROM and by reviewing information on CROM;
  - By providing recommendations on the development and validation of CROM;
  - By creating a knowledge repository to store CROM and facilitate identification and access of the most appropriate CROM in a specific context of use;
- Through a cooperation platform involving tobacco industry and the guidance of academia and regulatory agency stakeholders.

What is the proposed structure and working plan of the consortium?

The CROM consortium will be developed within the well renowned and respected structure CORESTA (Cooperation Centre for Scientific Research Relative to Tobacco), an association founded in 1956 to promote international cooperation in scientific research relative to tobacco and its derived products. The consortium structure and working plan, agreed upon between the TF members, are outlined on Figure 1:

- Specific working groups will lead the execution of specific objectives under the supervision of the CROM TF
- An independent scientific committee, composed of academic and public health researchers, will guide and review the outcomes of the working groups
- The CORESTA Scientific Commission will provide overall oversight of the consortium to ensure conformity of the work with CORESTA standards

Figure 1. Structure and working plan of the CROM Consortium



Page Break

What is the investment required by the consortium members?

- Industry members of the CORESTA PUB subgroup will contribute on a voluntary basis in the different working groups and the CROM-TF, provided their time dedicated to the consortium will be funded by their respective employer.
- To ensure the credibility and excellence of the deliverables produced by the consortium, it is paramount to get technical support from external subject matter experts for the execution of the working plan. The consultancy efforts have been estimated to an equivalent of half a day per week for a full year for 3 consultants. In addition, a travel budget for the independent scientific committee and external experts to attend face-to-face meetings has been estimated to an equivalent of 2 meetings/year for 5 individuals to attend.
- The initial financial investment is foreseen for a duration of 2 years and a scheduling payment will be set in accordance with key milestones of the different working groups. It is planned to have the consortium budget managed by the existing CORESTA secretary board.

	Cost/unit	Unit	
Consulting from external experts	300 USD/hour	624 (12 hours x 52 weeks)	187 kUSD
Travel expenses	5000 USD/person	10 meeting attendances	50 kUSD
		Totals	237 kUSD
		Investment per industry member per year	30 kUSD

Appendix: Members of the CROM consortium Task Force

	Name	Company, Country
Coordinator	CHREA-Christelle	Philip Morris International, Switzerland
Rapporteur	CAHOURS-Xavier	Imperial Tobacco, France
Industry Members	BLACK-Ryan, McCAFFERY-Stacey	Altria Client Services, USA
	PRASAD-Krishna	British American Tobacco, UK
	AYALA-FIERRO-Felix	ITG Brands, USA
	GILES-Lesley	JT International SA, Switzerland
	PARK-Chul-Hoon	KT&G Research Institute, South Korea
	CURTIN-Geoffrey, SMITH-Jeffrey	RAI Services Company, USA
	ACQUADRO-Catherine	ICON plc, France
Consultants funded by Industry	SHERWOOD-Neil	Neil Sherwood Consulting, Switzerland
	SHIFFMAN-Saul	Pinney Associates, USA

[1] Consumers include current users of tobacco products, former users and never users (who are potential users)

[2] U.S. Department of Health and Human Services. Guidance for Industry – Patient-Reported Outcome Measures: Use in Medical Product Development to Support Labeling Claims. 2009. Available at: https://www.fda.gov/downloads/drugs/guidances/ucm193282.pdf

[3] Acquadro C, Berzon R, Dubois D, Leidy NK, Marquis P, Revicki D, Rothman M; PRO Harmonization Group. Incorporating the patient's perspective into drug development and communication: an ad hoc task force report of the Patient-Reported Outcomes (PRO) Harmonization Group meeting at the Food and Drug Administration, February 16, 2001. Value Health. 2003 Sep-Oct;6(5):522-31.

[4] COER-Patient-Focused Drug Development. https://www.fda.gov/drugs/development-approval-process-drugs/cder-patient-focused-drug-development

Next Steps

- Will be presented at the CROM TF report in the afternoon

STPOST 58 – Session 8 Tuesday 08/10/2019

5.0 Unpublished Reports

- Vapor topography instrumentation
- Human Abuse Liability measurement
- Risk Perception – Meta analysis from PATH study
- D2L measurement for BfTG e.V.
- Adaptation of SPA-M to measure vaping puff topography
- Methodologies to assess nicotine cognitive effects
- E-cig Button Press Duration as a Proxy for Aerosol delivery

6.0 Next Steps

No.	Description	Who	When
1	NWIP 156 – Complete Sub-Group review of HAL document	SB/KP	Q4 19
2	NWIP 156 – Final HAL document review by stakeholders	SB/KP	Q1 20
3	NWIP 156 – Submit HAL Review for publication	SB/KP	Q2 20
4	NWIP 169 – First draft of VLNC review by Sub-Group	NS/KP	Q4 19
5	NWIP 169 – Final VLNC document review by stakeholders	NS/KP	Q1 20
6	NWIP 169 – Submit VLNC Review for publication	NS/KP	Q2 20
7	Draft NWIP for the proposed NGP use-behaviour collaboration	KP/XC	Q1 20
8	Next meeting Spring 2020 – Celerion in Belfast	KP/GLP	May 20

Big Thank You to all the contributors

Any Questions?

What does the future hold for Product Use Behaviour Research?

Future of PUB Research

'You've got rigour but we've got vigour'.

Tech Start-up in Consumer Research Field

Future of PUB Research

Exploring the dynamics of human behaviour and the patterns in use behaviour can help us better understand how consumers will respond to new innovations and products.

Future of PUB Research

Are we really utilising technology to its full advantage or just using it to do what we have always done?

The future for PUB research

Using technology to heighten our understanding of human experience

Touchpoints with technology throughout the day –customer