

STATISTICS CANADA

# MODERNIZING DATA COLLECTION IN CANADA

UNECE Data Collection Workshop  
Geneva, Switzerland  
October 14-16, 2019



Delivering insight through data for a better Canada



# **THE CHALLENGE**

## **DECLINING RESPONSE RATES AND TIMELINESS OF RESULTS**



**STATISTICS CANADA HAS INVESTED IN  
LEADING EDGE RESEARCH... IN TWO PHASES**



# PHASE ONE

NOW COMPLETE

**Optimization of current  
collection approaches**





E-COLLECTION



FLEXIBLE AND SCALABLE

**NEW MULTI-MODE DATA  
ACQUISITION PLATFORM**

# ICOS

**INTEGRATED COLLECTION  
AND OPERATIONS SYSTEM**



ADVANCED SCHEDULER



CLOUD-ENABLED

OPTIMIZATION FEATURES

MANAGEMENT INFORMATION SYSTEM





BETTER USE OF AVAILABLE INTELLIGENCE  
EVALUATE PROPENSITY TO OBTAIN RESPONSE  
OPTIMIZATION OF INTERVIEWER EFFORTS  
MAXIMIZE QUALITY OF RESPONSE  
REDUCE IMPACT OF NON-RESPONSE BIAS

*Management on the fly!*

## CASE PRIORITIZATION AND INTERVIEWER ALLOCATION

# RESPONSIVE COLLECTION DESIGN

HIGHER RESPONSE RATE AND IMPROVED DATA  
QUALITY... WITHOUT INCREASING COST

Adaptive approach



**STEP 1**

Planning Phase



**STEP 2**

Initial Collection Phase



**STEP 3**

RCD Phase 1 - to improve  
response rate



**STEP 4**

RCD Phase 2 - to improve  
representativeness

Tweak as you go



# ACTIVE MANAGEMENT



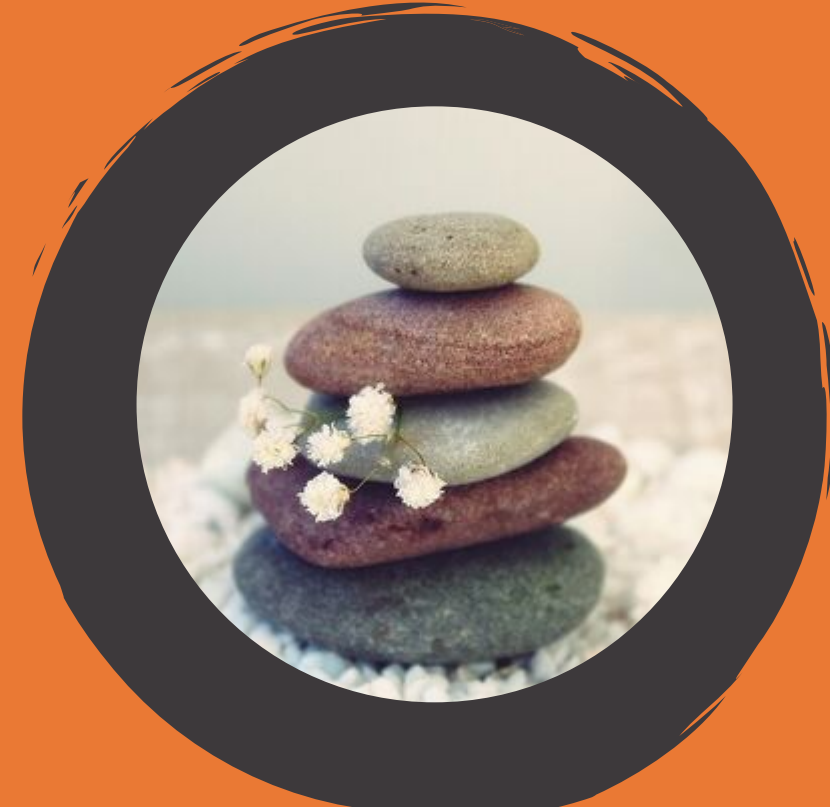
## COLLECTION MILESTONES

Adapt collection strategy as needed



## IDENTIFY PROBLEMS EARLY

And correct them immediately



## BALANCE PRIORITIES

Data quality, timeliness & costs

A stylized orange megaphone with a white cone and a grey handle, pointing towards the right.

*targeted  
communication*

# **"Expansion and improvement of respondent material"**

NUDGE respondents towards completing surveys by using new and better ways to communicate with them.

**segmentation**







# PHASE TWO

NOW UNDERWAY

Experimenting with new  
and innovative ways  
of collecting data



# STATCAN IS NOW ACTIVELY EXPERIMENTING WITH CROWDSOURCING



Involve the population in  
proactive data collection



Joining the ranks of Wikipedia,  
Waze & SETI@home



Our StatsCannabis operation  
had over 23,000 responses





# **TEXTING CANADIANS IS AN EFFECTIVE TOOL TO EFFICIENTLY REACH THEM ESPECIALLY WITH MILLENNIALS**

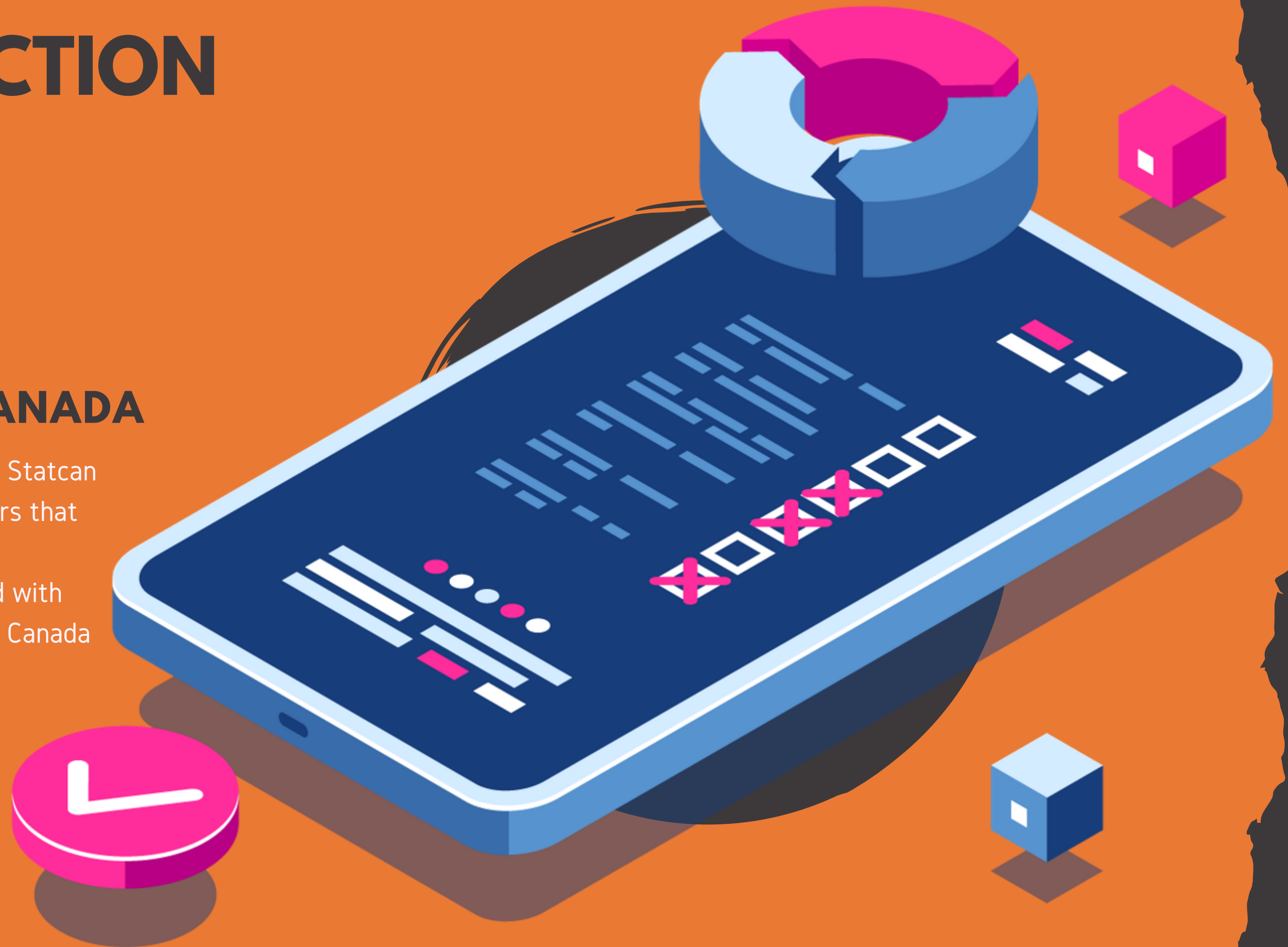
Statcan is currently piloting the use of SMS  
(short message service) as a survey reminder strategy.

# DATA COLLECTION ON MOBILE DEVICES

## "APPLICATIONS" IN CANADA

Besides collection and reminder functions, Statcan could also benefit from the multiple sensors that smartphones currently use.

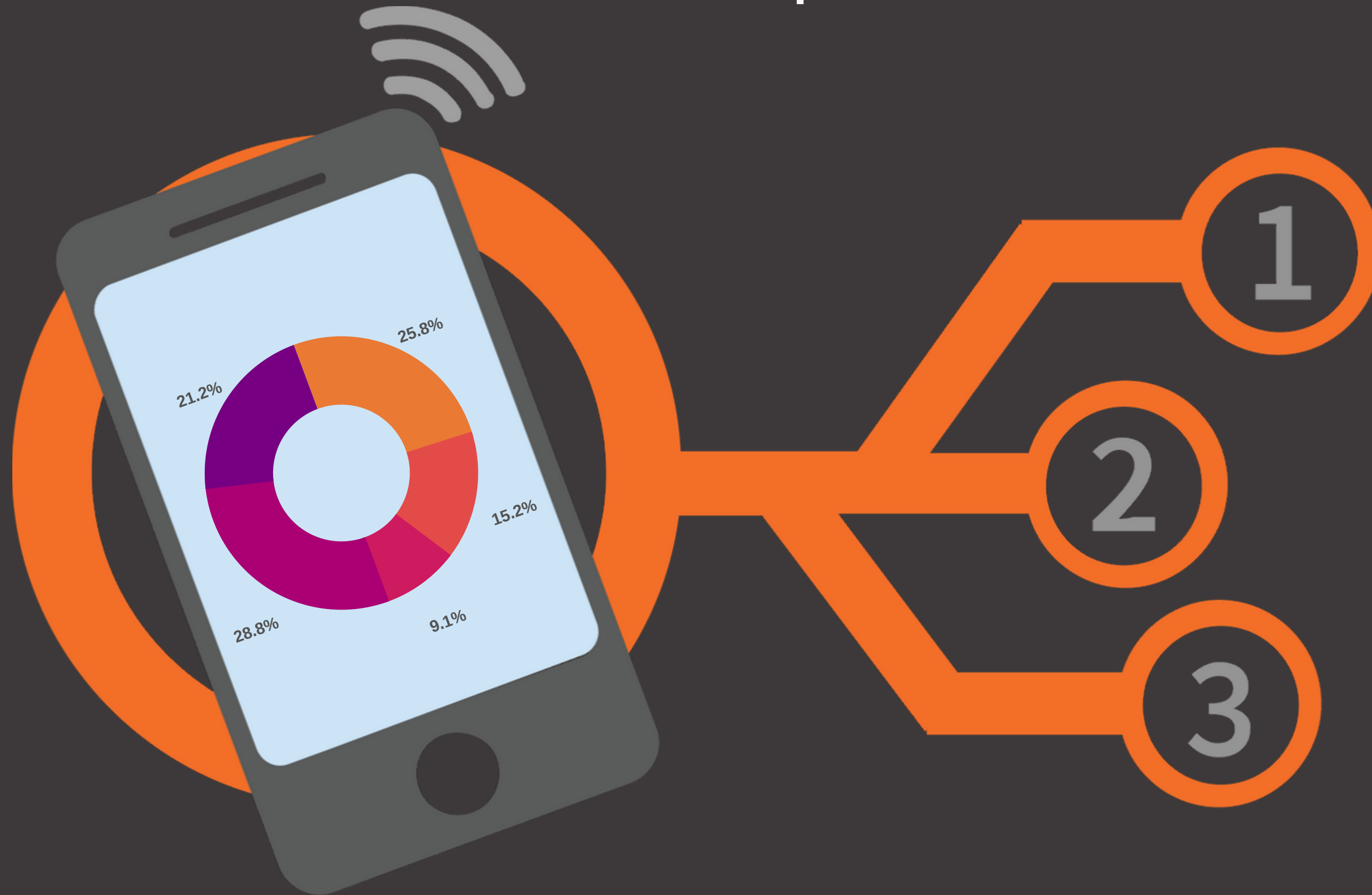
Privacy considerations are being discussed with the Office of the Privacy Commissioner of Canada and cybersecurity experts.





# COGNITIVE INTERACTIVE VOICE RESPONSE

Data collection via AI platforms and chatbots





# "HARVESTING" DATA FROM THE WEB

## EXPLORING **WEB SCRAPING** AS A NEW MODE OF COLLECTION

A pilot project is planned to scrape data from websites, as a way to improve statistics on some types of manufactured commodities and their sales amounts.





# HARNESSING THE LATEST TECHNOLOGIES

## SENSORS, SCANNERS & SATELLITES



### THE INTERNET OF THINGS

Moving away from traditional approach towards collecting from sensors that are everywhere around us



### USING SCANNER DATA FROM RETAIL OUTLETS

Statistics Canada has completed the first year of a three-year plan to introduce scanner data into the production of the Consumer Price Index (CPI)



### USING SATELLITE AND TELEMETRY FOR NATIONAL STATISTICS

We are now working on an innovative project with the Canadian Food Inspection Agency to create real-time modelled pig inventories by location





**STATISTICAL OFFICES WILL  
ALWAYS NEED TO LOOK  
FOR NEW AND BETTER  
WAYS TO COLLECT DATA,  
ADAPTING TO THE WORLD  
AROUND US AND MEETING  
THE EVER INCREASING  
NEEDS OF USERS.**



# THANK YOU!

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**PLEASE VISIT OUR WEBSITE AT:  
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