



20th National Conference for Rural Public &
Intercity Bus Transportation
October 15, 2012

Del Peterson & Jeremy Mattson
Small Urban & Rural Transit Center
Upper Great Plains Transportation Institute
North Dakota State University



Introduction

- * Project selected by the FTA's Public Transportation Participation Pilot Program
- * Problem Statement
 - * Barriers to individual participation
 - * Limited agency resources
 - * A dynamic environment
 - * A technology divide
- * Main Goal
 - * Evaluate benefits of integrated systems of technology to improve public participation in public transportation planning



Introduction

- * Activities
 - * Onboard surveys with mobile electronic devices (smartphones, tablets)
 - * Online surveys
 - * Webcasts
 - * Social media
- * Conducted in Fargo-Moorhead (ND-MN) area
- * Study findings will be used as a planning and feasibility tool
- * Findings can also be replicated nationwide



Project Partners

- * Metro Area Transit (MATBUS)



- * Fargo-Moorhead Metropolitan Council of Governments (Metro COG)



- * City of Fargo



- * City of Moorhead

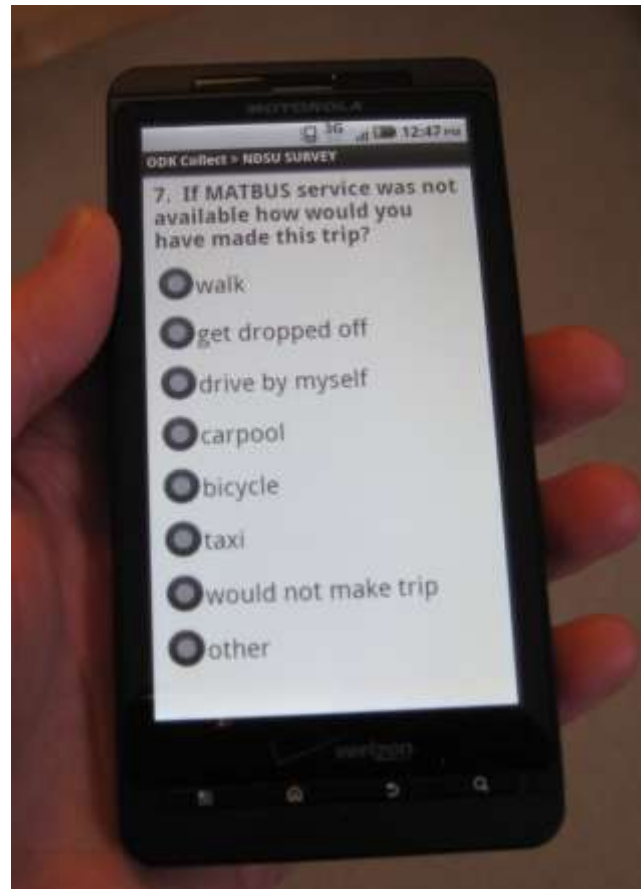


Fargo-Moorhead Background Information

- * Population
 - * Fargo – 105,000
 - * Moorhead – 38,000
 - * West Fargo – 26,000
- * MATBUS Ridership Summary (2011)
 - * Total Ridership – 2.1 million
 - * Rides per day – 6,820
 - * 25 fixed routes



Onboard Surveys with Mobile Devices



Onboard Surveys

- * Approach
 - * Mobile devices
 - * Student surveyors
 - * Paper surveys and online surveys administered for comparison purposes
- * Three surveys
 - * NDSU on-campus survey
 - * Metro COG transit development plan (TDP) survey
 - * Moorhead MATBUS survey



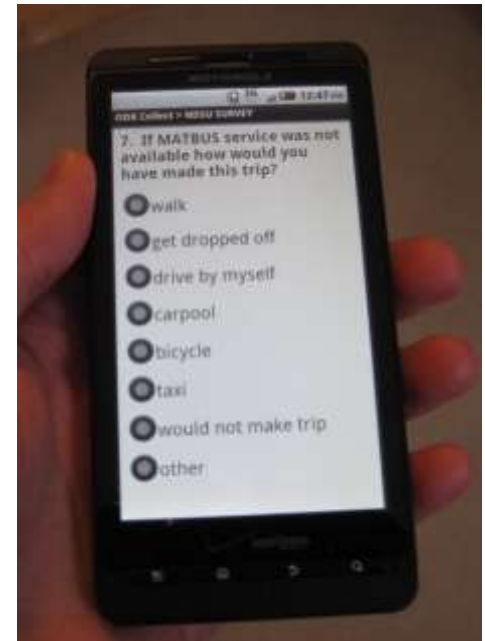
Onboard Surveys

- * Technology

- * Ability to collect location and audio information
- * Open Data Kit (ODK) system (University of Washington)

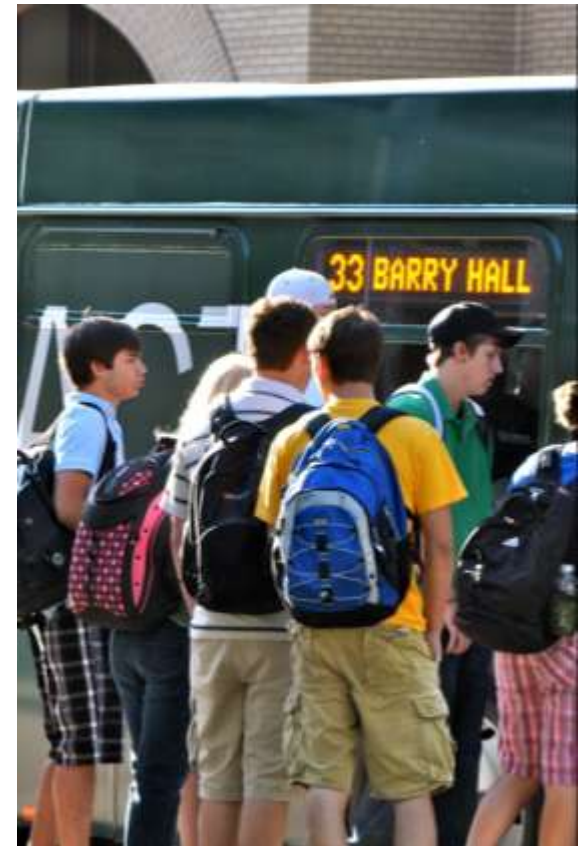
- * Mobile Devices

- * Two Motorola Droid 2s (3.7" screen)
- * Two Motorola Droid Xs (4.3" screen)
- * Samsung Galaxy Tablet (7" screen)



Onboard Surveys

- * First Survey: NDSU on or near campus
 - * 2 routes surveyed that service NDSU's main campus
 - * Survey questions on MATBUS service
 - * Included opinion questions regarding use of mobile devices
 - * All but one question multiple choice
 - * One open-ended question that could be verbally recorded



Onboard Surveys

- * Second Survey: Metro COG transit development plan survey
 - * Multiple fixed-routes surveyed throughout FM community
 - * Used for 5-year transit development plan (TDP)
 - * Importance of surveying diverse group
 - * Longer than first survey
 - * Mostly multiple choice with 4 questions requiring surveyor to type an answer
 - * Typed answer questions included destinations difficult to reach by MATBUS or areas that should be served



Onboard Surveys

- * Third Survey: Moorhead MATBUS Survey
 - * Focused on 4 routes in Moorhead
 - * 6 multiple choice questions
 - * Simple, focused and easy to administer



Onboard Surveys

- * Administration
 - * Riders invited to participate as they boarded the bus
 - * First survey participants offered MATBUS koozie upon completion
 - * No incentives provided for other surveys
 - * First round of surveys had riders complete surveys themselves
 - * Subsequent rounds involved personal interviews



Onboard Surveys - Results

		Responses Collected	Responses per Person-Hour	Response Rate	Labor Cost per Survey ^a
NDSU Survey					
	Mobile device	57	4.4	86%	2.73
	Paper	63	10.1	95%	2.39
TDP Survey					
	Mobile device	35	2.0	_b	6.00
	Paper	509	_c	_b	1.41 ^c
Moorhead Survey					
	Mobile device	173	13.3	82%	0.90
	Paper	249	_c	_b	0.10 ^c

^aIncludes cost for administering survey and data entry for paper surveys. Does not include survey design. Labor cost is assumed to be \$12 per hour.

^bNot calculated

^cSurveyors were not used, so responses per person-hour does not apply, and labor cost includes only data entry.

Onboard Surveys

- * Factors affecting number of responses
 - * Ridership levels
 - * Average trip lengths
 - * Survey length
 - * Willingness to complete survey
 - * 80-86% response rate
- * Quality of surveys better for mobile device vs. paper (responses more complete)
- * For third survey, surveyors onboard for 5% of route service hours and obtained 41% of the usable responses



Onboard Surveys

- * Experience with using the technology
 - * Respondents liked and preferred using the mobile devices, especially younger participants.
 - * Many, especially older respondents, wanted the questions read to them and did not want to complete it themselves.
 - * Some were grateful to be able to take the survey this way since they were not able to complete the paper survey themselves.
 - * Surveyors found it difficult to operate more than one device at a time.



Onboard Surveys – Technology Experience

Questions	NDSU Survey			TDP Survey		
	Yes	No	Don't know	Yes	No	Don't know
	(Number of responses)			(Number of responses)		
Did the use of a mobile device impact your decision to participate in the survey?	20	27	8	15	8	7
Did the use of a mobile device impact you answers?	3	49	2	7	18	5
Were you concerned about your privacy when completing this survey?	5	49	- ^a	3	27	- ^a
Would you have preferred to complete the survey in private?	3	51	- ^a	2	28	- ^a
Would you have preferred to complete the survey in an alternative format (paper)?	0	53	- ^a	5	24	- ^a
Have you previously participated in an on-vehicle rider survey?	4	49	- ^a	9	21	- ^a

^aDon't know was not an option for these questions.

Online Surveys

www.surveymonkey.com

NDSU Student Transit Survey Spring 2011

4. Transportation to Campus

1. What modes of transportation do you use, even occasionally, to travel to campus?

Walk

Bicycle

Automobile

Carpool

MATBUS

Motorcycle

Other (please specify)

2. What is the longest acceptable travel time by MATBUS from your residence to campus?

0 to 5 minutes

6 to 10 minutes

11 to 20 minutes

21 to 30 minutes

31 to 40 minutes

41 to 50 minutes

51 to 60 minutes

Would not ride

3. What factors influence the mode of transportation used to travel to campus?

Travel time

Weather

Parking availability

Cost of parking

Vehicle cost

Convenience

Other (please specify)



Online Surveys

- * NDSU student survey – April 2011
 - * Link sent to all NDSU students by email via the student listserv.
 - * 858 responses received (6% of entire student population), including 485 responses from students who use MATBUS.
- * Transit Development Plan (TDP) survey, in conjunction with onboard survey – April 2011
 - * Posted on Metro COG's website, advertised by social media.
 - * Received just 28 responses, compared to 577 paper responses collected.

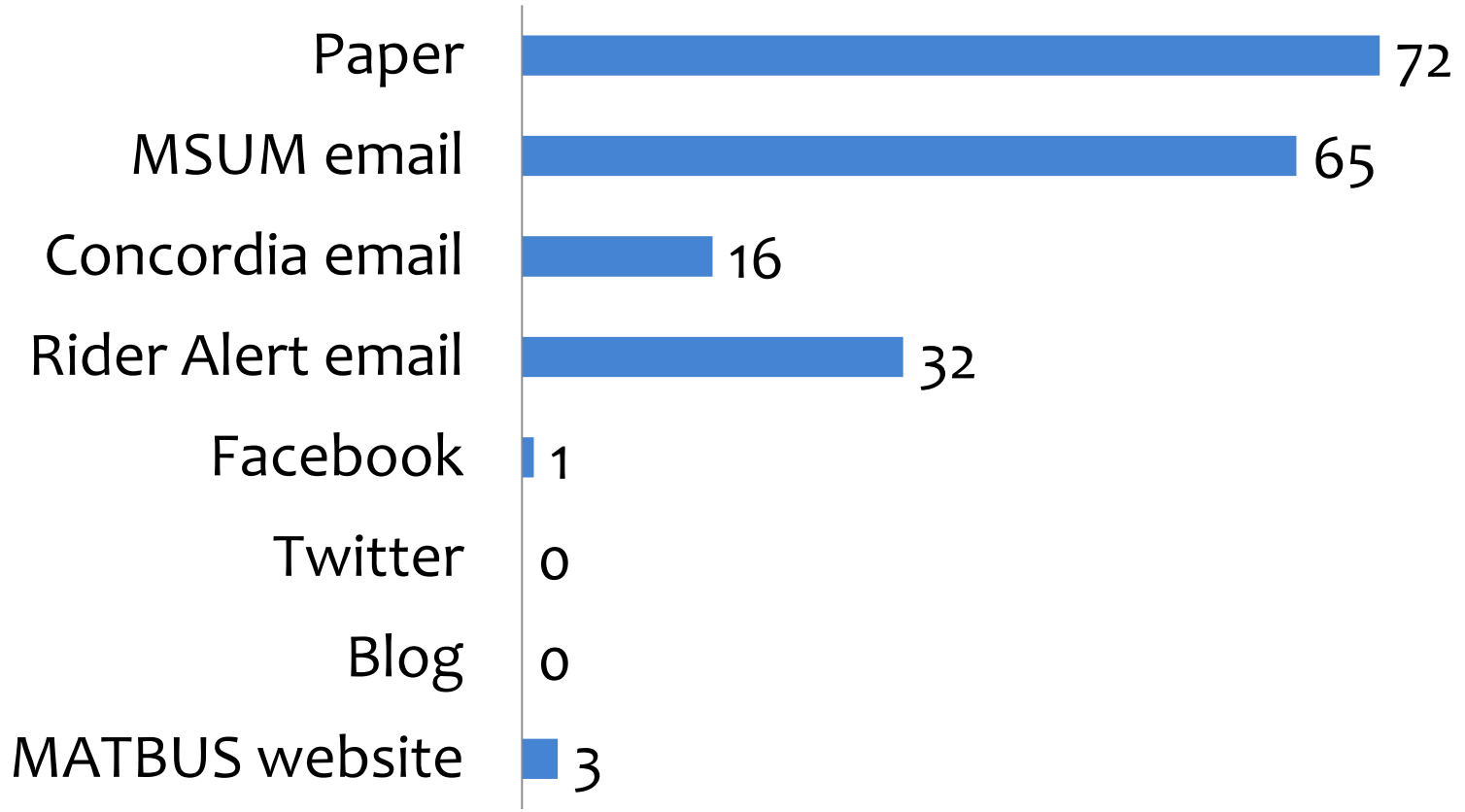


Online Surveys

- * Moorhead transfer pattern survey, in conjunction with onboard survey – December 2011
 - * Conducted immediately following onboard survey.
 - * Link to survey and follow-up reminder was sent via Rider Alert email and through social media.
 - * 72 responses received.
- * Moorhead service change survey – April 2012
 - * Compare response rates via Rider Alert email, social media, links posted onboard bus, student listserv.
 - * Compare demographic characteristics and responses of online participants versus paper survey participants.



Online Surveys – Responses for Moorhead Service Change Survey, By Method



Online Surveys – Demographic Characteristics of Respondents

		Moorhead Survey – Paper (n=72)	Moorhead Survey - MATBUS Online (n=36)	Student Email (n=81)	TDP Survey (n=137)
Age					
	18-24	15%	29%	83%	
	25-39	19%	23%	9%	
	40-59	55%	49%	4%	
	60 or older	11%	0%	3%	
Income					
	Less than \$17,500	64%	44%	69%	68%
	\$17,501 - \$23,000	10%	16%	9%	16%
	\$23,001 - \$29,250	6%	9%	4%	4%
	\$29,251 - \$39,999	3%	13%	4%	6%
	\$40,000 - \$59,999	11%	16%	3%	3%
	Over \$60,000	6%	3%	11%	4%

Online Surveys - Findings

- * Advantages

- * Inexpensive
- * Easy to administer
- * Capable of providing quick feedback
- * No surveyors are required
- * No data entry is required
- * Some types of questions are better suited for the online survey
- * Respondents are less constrained by time

- * Disadvantages

- * Some questions are better suited to an onboard survey
- * Onboard surveys sometimes provide more accurate results
- * Not as many responses as onboard survey
- * Some demographics may be underrepresented and results may not be representative of entire ridership



Online Surveys - Findings

- * Online survey could be an inexpensive and useful complement to an onboard survey but is effective as a primary tool in only some circumstances.
- * An online survey of students is highly effective because a large percentage of students use transit and they can all be reached by email.



Webcasts



The screenshot shows a webcast window titled "Fargo-Moorhead Metro COG Public Input Meeting (Sharing) - Adobe Connect". The main content area displays the following text:

Fargo-Moorhead Metropolitan Council of Governments

TH 10, TH 75, Center Ave.
Corridor Study

Public Input Meeting
March 27, 2012



The interface includes a sidebar on the left with sections for "Attendees (0)", "Chat (2 messages)", and "Participants (0)". The chat section contains the following messages:

- MSU USPT1: Welcome to the March 27 public input meeting. The webcast will begin at approximately 2:30 pm.
- MSU USPT2: If anyone has a comment or question, type them in the chat box and we will answer them during the live webcast.
- MSU USPT3: A recording of this presentation, with better audio, is available on the Metro COG website at www.farmetrocog.org
- MSU USPT4: The maps are also available to download.

At the bottom of the window, there is a taskbar with various application icons and a system tray showing the time as 2:42 PM.



Webcasts

- * The Usefulness of Webcasts
 - * Great potential for increased public participation
 - * Unable to attend in person, view online
 - * Recording can be viewed anytime
 - * More user-friendly than large documents
 - * Can submit comments and questions



Webcasts

- * Technology and Cost
 - * Adobe Connect software
 - * Chat box
 - * Video of presenter
 - * Two wireless microphones, receiver, and mixer used to record audio
 - * Webcasts can be recorded and a unique URL is created
 - * Adobe Connect Account: \$540/year, \$45/month
 - * If 12 presentations per year, 6 hours labor per webcast at \$35/hour ~ \$255 per webcast



Webcasts

* Public Input Meeting Webcasts

Meeting	Date Conducted	Live Participants	Views of Recording (as of July 15, 2012)
TDP Meeting 1	Sept. 21, 2011	4	229
Corridor Study 1	Nov. 15, 2011	0	98
Corridor Study 2	Nov. 16, 2011	0	112
Corridor Study 3	Nov. 22, 2011	0	56
TDP Meeting 2	Nov. 30, 2011	0	62
Corridor Study 4	Mar. 27, 2012	0	173



Webcasts

- * Opinions From Users
 - * Metro COG planners had very positive comments
 - * Seen as valuable tool
 - * Not concerned with people connecting in real-time
 - * Posted online and accessed on demand
 - * Impressed with final product
 - * Positive comments from the public as well
 - * Good audio quality
 - * They will use for future events



Social Media

facebook

matbus

Wall · Info · Events · Photos

excuse MATBUS Ruler Alert: Route 6 and 7 back on Route Dec 21, 2010
 Modified Engineering equipment started to fully fix the 1/2 mile fault yesterday with the opening for afternoon of Holiday December 20th. Route 6 and 7 will be back on their regular routes by the first Friday morning, December 24th.

excuse MATBUS Ruler Alert: Holiday Hours for MATBUS
 Additional rules for routes 6 and 7 on December 21st - New York, 21st and 22nd - Holiday hours for MATBUS. Regular routes 6 and 7 will be back on their regular routes by the first Friday morning, December 24th.

excuse MATBUS Ruler Alert: REMINDER - Tokens no longer accepted after 12 December 31, 2010
 Download rules for general information. Tokens will expire on 12/31/10. For full rules for MATBUS, token and regular fare rules and discounts, and for full rules, please go to the website and rules of fare rules and discounts for MATBUS on website 1, 2010. Details of the site...

twitter

MATBUS

MATBUS provides public transportation in Fargo, Moorhead and West Fargo with fixed route, Paratransit and Metro Senior Ride services.

Follow

182 Tweets

0 Followers

182 Connections

Follow

Stay in touch with MATBUS

Full name

First name

Last name

Password

Sign up

Tweets

Following

Followers

Favorites

Lists

Search

MATBUS verified
 MATBUS Ruler Alert - Proposed Changes to Fargo Routes 11, 12, 13, 14, 16, 17, 18, 21, 22, 23 and 29, 2010/12/10

MATBUS verified
 Parade Detail: St. Patrick's Day Parade (3/11/11) post 12/10/10

MATBUS verified
 MATBUS Ruler Alert - Weather Advisory post 12/10/10

MATBUS verified
 MATBUS Ruler Alert - The Fargo Project will be boarding MATBUS vehicles to visit with passengers post 12/10/10

MATBUS verified
 I uploaded a @YouTube video post: http://www.youtube.com/watch?v=... MATBUS & DOWNTOWN BARTER

uncharged item.

Winter Fred Harbor and fire and other signs made near the of Interstate 29, the North Dakota.

ation: Sioux retirement of

D FORKS - The city of North Dakota hired fans on its city of North Dakota g Sioux" Facebook hat the popular page retired shortly, and re urged to shift their rise to a new page.

run further on the day than anytime in the past 10 weeks, but it was clear that there were several more miles before ... 12/11 at 9:58 PM

FEATURED AREA VOICES

MATBUS
 MATBUS Ruler Alert - View the Webcast from the Transit Development Plan (TDP) Presentation. A presentation on the draft TDP, conducted by the contracted transit consultant and the Metropolitan Area Council of Governments (METROCOG) was given to the elected officials and policymakers of the P... 12/11 at 1:57 PM

WILDWINGS
 Like some sports leagues, these guys are semi-pro. I had never heard of this group but that's little wonder since I'm removed by hundreds of miles and decades of years. However, a friend emailed me a link to this story in the New York Times (don't see...

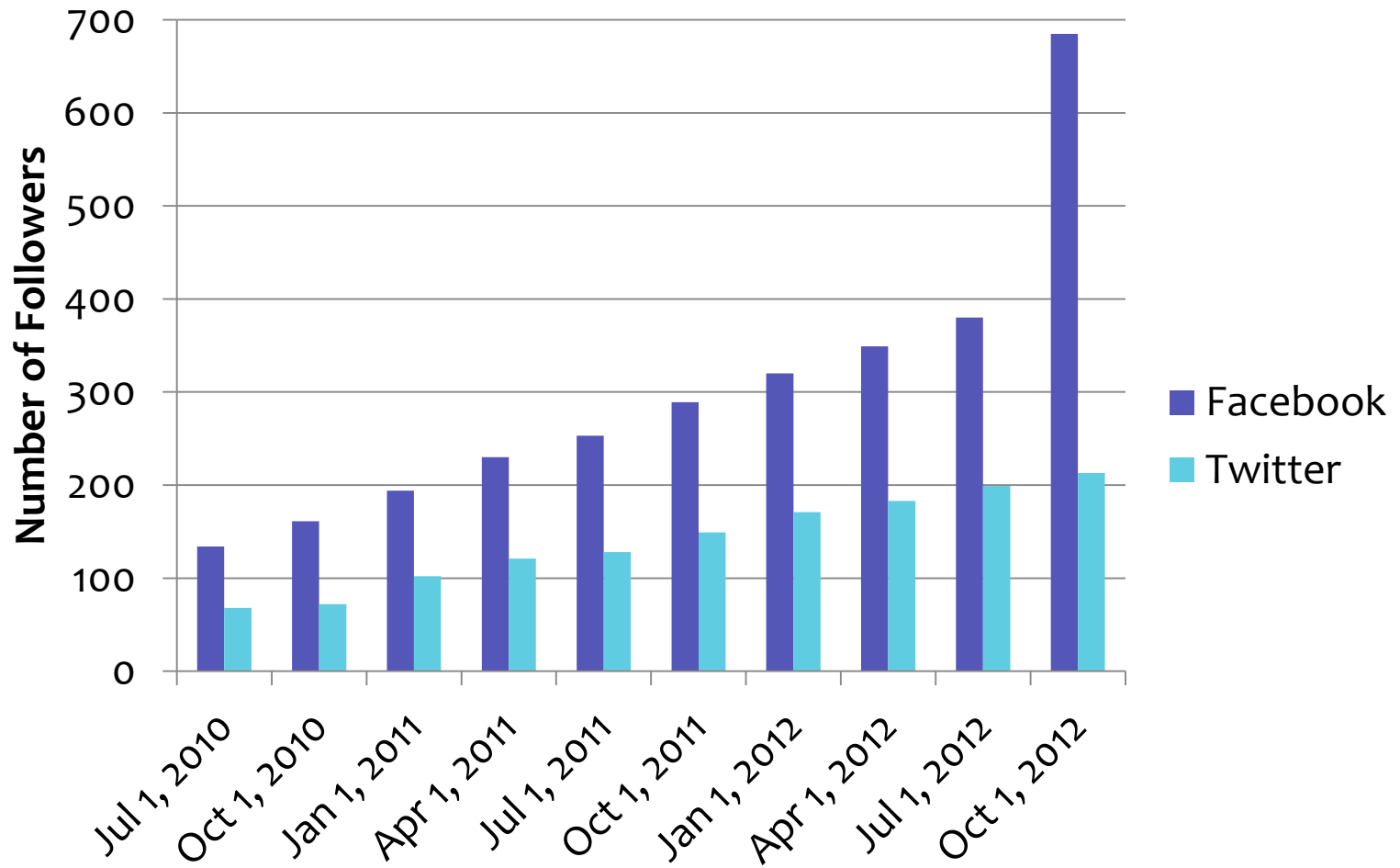


Social Media

- * Facebook and Twitter
- * Launched August 2009
 - * Advertised in city magazine, newsletter, university Transit Guides, marketing material, website, etc.
- * Primary use: Providing rider information, promoting the service.
- * Also used to provide links to online surveys and webcasts and inform the public of public input meetings and opportunities to provide comments.

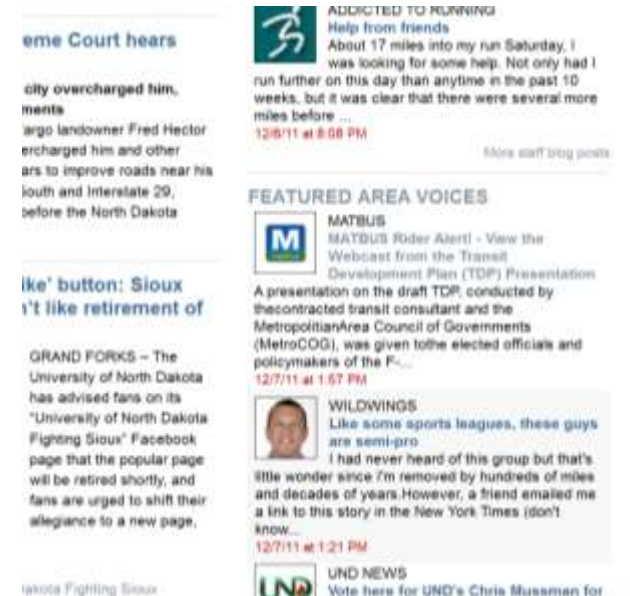


MATBUS Facebook and Twitter Followers



Social Media

- * Blog
 - * Posts similar information as Facebook and Twitter
 - * Posted on local newspaper website
 - * RSS feed available
- * YouTube
 - * How to ride videos
 - * Promotional videos
- * Flickr
 - * Ad campaign



The screenshot shows a blog page with several articles and a 'FEATURED AREA VOICES' section. The articles include:

- eme Court hears**: A snippet of an article about a court hearing.
- city overcharged him, ments**: A snippet of an article about a city overcharging someone.
- argo landowner Fred Hector**: A snippet of an article about a landowner.
- ike' button: Sioux**: A snippet of an article about a button.
- GRAND FORKS - The**: A snippet of an article about Grand Forks.
- UNDA Fighting Sioux**: A snippet of an article about the Fighting Sioux.

The 'FEATURED AREA VOICES' section includes:

- MATBUS**: A post about a MATBUS rider alert.
- WILDWINGS**: A post about wild wings.
- UND NEWS**: A post about UND news.



Social Media - Findings

- * A variety of individuals have subscribed to these services – students, parents, older adults, people with disabilities, human service agencies, daycare providers, city policy makers, etc.
- * Useful for effectively and quickly pushing out information.
- * Easy to manage and does not require a substantial amount of time.
- * Facebook has generated a few comments and interaction with the public, but not a lot.
- * Has been largely used for disseminating information.
- * Useful for improving public participation.
- * But not as effective as Rider Alert email in generating participation in surveys and webcasts.



Social Media - Findings

- * MATBUS views the blog as a useful tool but does not have sufficient staff time to devote for it.
- * If more staff time were available, MATBUS would use the blog to interact more with the public.
- * Having the local newspaper pull news releases, public hearing notices, or detour information directly from the blog and post it onto their website helps get the message to the media faster while increasing visibility.



Lessons Learned

- * Mobile devices can be used to complement, or in some cases, replace, onboard paper surveys.
- * Mobile devices are most effective for shorter, simpler surveys.
- * Response rate was high with mobile devices, but we could conduct just one survey per surveyor at a time.
- * Data quality improved and data entry costs reduced for both mobile device and online surveys.



Lessons Learned

- * Online surveys are an inexpensive and useful complement to onboard surveys.
- * Webcasts are a fairly easy and relatively inexpensive way to disseminate information and reach a wider audience.
- * Online recordings that can be accessed on demand are especially useful, though live participation was very low.
- * Social media was viewed favorably by the transit system as a means to quickly push out information.
- * Lack of available staff time limited use of the blog.



Thank you!

Del Peterson

Associate Research Fellow

Small Urban & Rural Transit Center

North Dakota State University

del.peterson@ndsu.edu

Jeremy Mattson

Associate Research Fellow

Small Urban & Rural Transit Center

North Dakota State University

jeremy.w.mattson@ndsu.edu

