Mobile Context-based Services: Current and Future Scenarios

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

ABOUT ME

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

ABOUT ME

Chair: The Dept. of Software Engineering

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

ABOUT ME

Chair: The Dept. of Software Engineering
Serial Entrepreneur

1999 → 2014

earthnoise.com
broadcast your videos on the web

TriPlay

VeVent

LECTURUS

Attentiv
Your personal communication assistant
Download for your Android

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

PhD
Computer Science

MS
Interactive
Telecommunications

MA
Cognitive
Psychology

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

PhD
Computer Science

MS
Interactive
Telecommunications

MA
Cognitive
Psychology

Amnon Dekel

Shenkar: Engineering, Design, Art

&

The Hebrew University Jerusalem

Context?

Context?

Context?

Context?

Context?

Context?

Context

onte x

nte

Context?

CONTEXT?

Context?

CONTEXT?

Context?

Context is as ELUSIVE as it is IMPORTANT

Why ELUSIVE?

No Single Definition

Why ELUSIVE?

No Single Definition

Why ELUSIVE?

No Single Application

No Single Definition

No Single Method

Why ELLIS?

No Single Application

Why IMPORTANT?

Enables Systems to KNOW

Why IMPORTANT?

Why IMPORTANT?

Enables Systems to KNOW

Enables Systems to UNDERSTAND

Why IMPORTANT?

Enables Systems to KNOW

Enables Systems to ACT

Enables Systems to UNDERSTAND

Enables Systems to KNOW

Enables Systems to ACT

Seem to…

Why IMPORTANT?

Enables Systems to UNDERSTAND

Seem to…

context

PEOPLE

context

PLACES

THINGS

PEOPLE

PEOPLE Interact with THINGS in PLACES

PLACES

THINGS

PEOPLE

PLACES Enable PEOPLE to do THINGS

PLACES

THINGS

Mobile Phones are a Special Class of THINGS

Mobile Phones are a Special Class of THINGS

- They are a THING

Mobile Phones are a Special Class of THINGS

- They are a THING
- They represent a PERSON

Mobile Phones are a Special Class of THINGS

- They are a THING
- They represent a PERSON
- They are a PLACE

Mobile Context-based Services

Primary Contexts

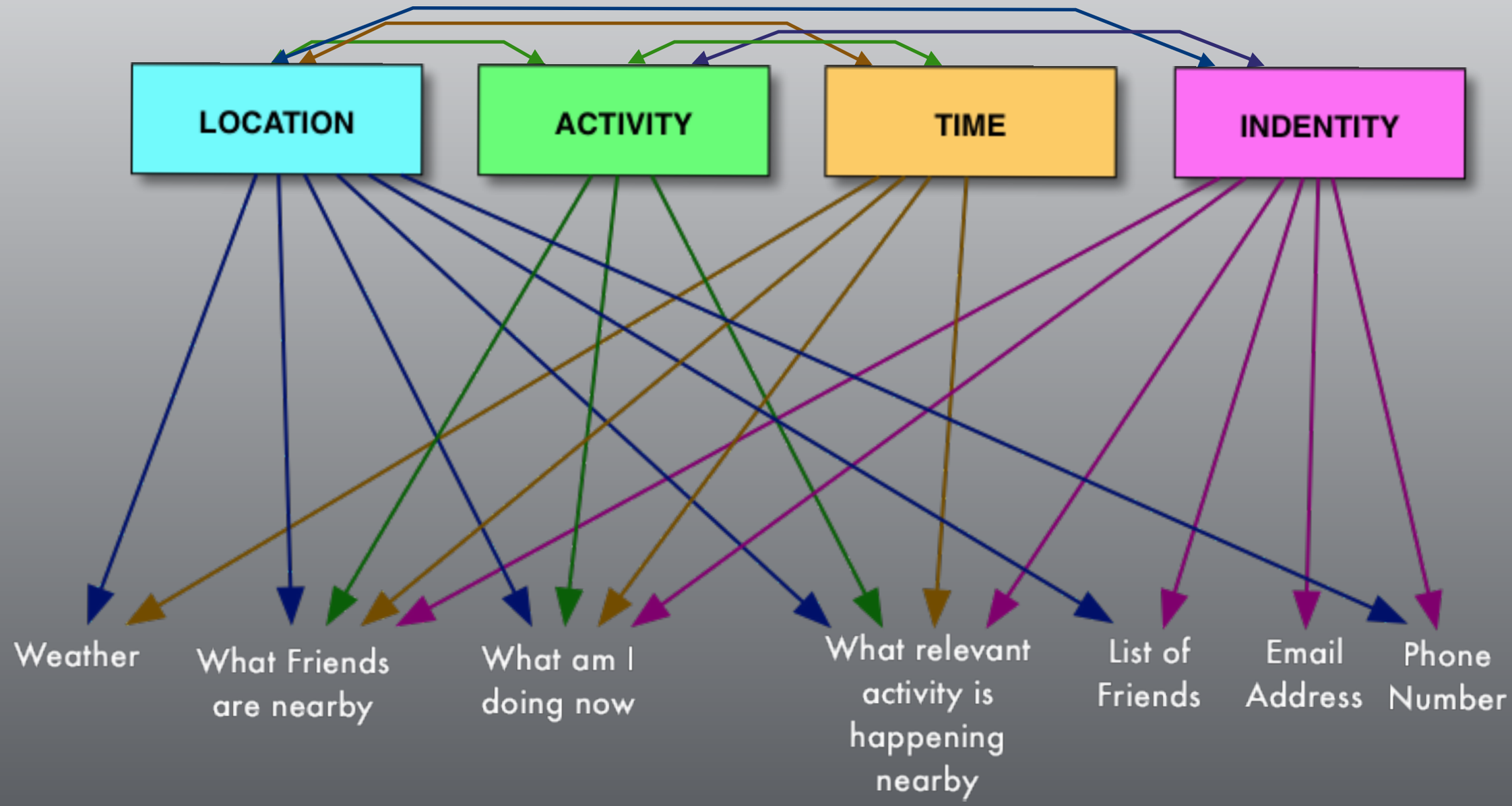
LOCATION

ACTIVITY

TIME

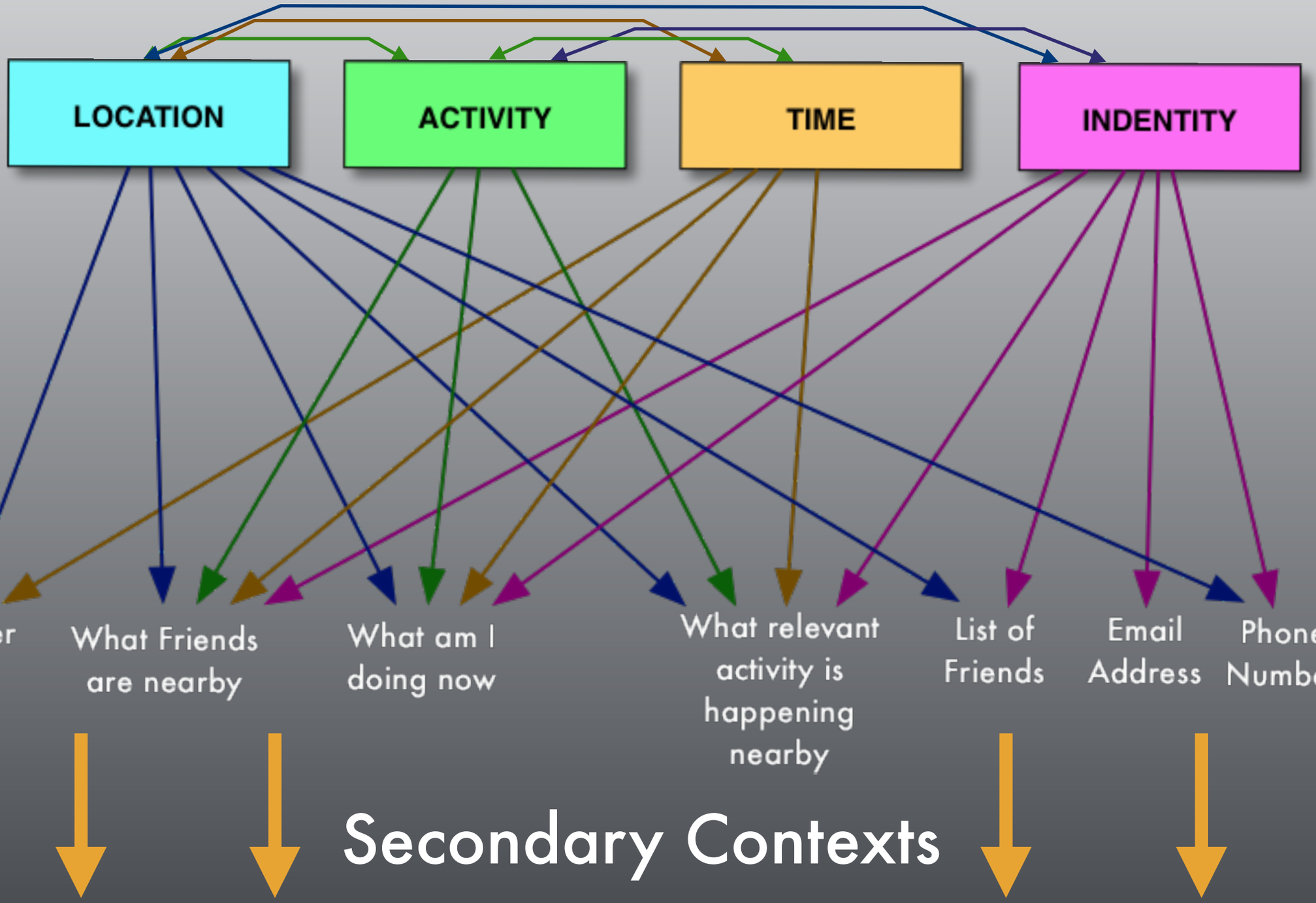
INDENTITY

Primary Contexts



Secondary Contexts

Primary Contexts



Secondary Contexts

SERVICES / APPLICATIONS

CURRENT

"Personalization"

חדשות ערוץ 2 באינטרנט. המהדורה המרכזית של חדשות 2 בשידור חי עם יונית לוי לצפייה ישירה

"Personalization"

חדשות ערוץ 2 באינטרנט. המהדורה המרכזית של חדשות 2 בשידור חי עם יונית לוי לצפייה ישירה

"Personalization"

חדשות ערוץ 2 באינטרנט. המהדורה המרכזית של חדשות 2 בשידור חי עם יונית לוי לצפייה ישירה

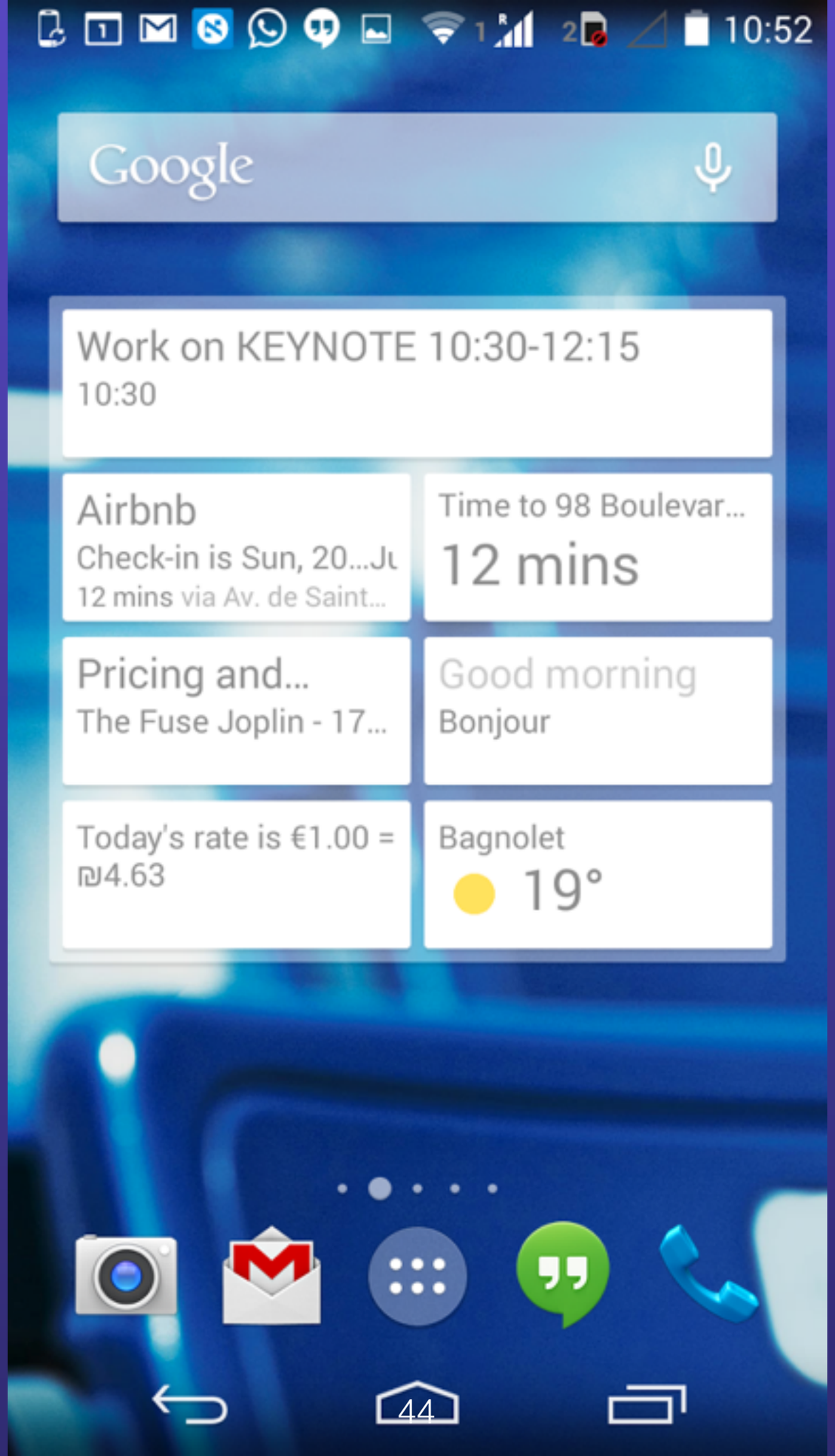
CONTEXT = YOU*

*

Your Browsing history
Your Search history
Your Online Persona

"Personalization"

NOW


10:52
Google
Work on KEYNOTE 10:30-12:15
10:30
Airbnb
Check-in is Sun, 20...Ju
12 mins via Av. de Saint...
Time to 98 Boulevar...
12 mins
Pricing and...
The Fuse Joplin - 17...
Good morning
Bonjour
Today's rate is €1.00 = ₪4.63
Bagnolet
19°

11:04

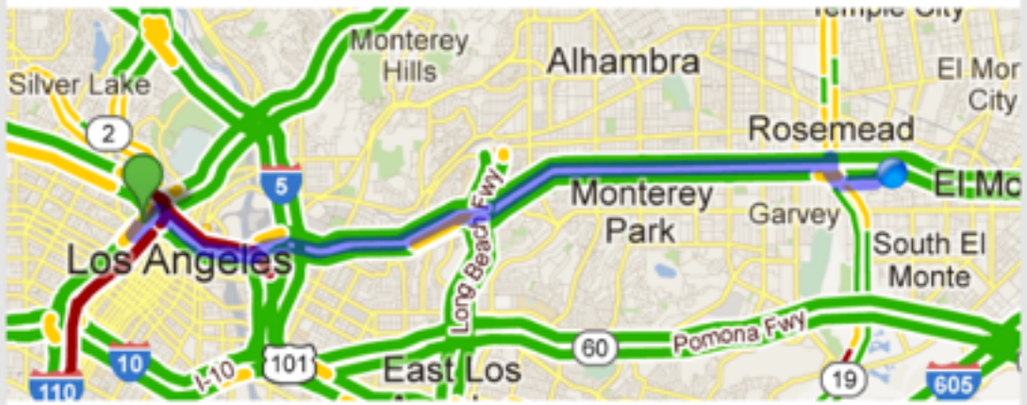
HAZE
0mph

73°

WED	THU	FRI	SAT
93°	86°	86°	86°
55°	52°	50°	48°

21 minutes to Home

Normal traffic on I-10 W



Navigate

10:52

OTE 10:30-12:15

Time to 98 Boulevar...
12 mins

Good morning
Bonjour

Bagnolet
19°

11:04

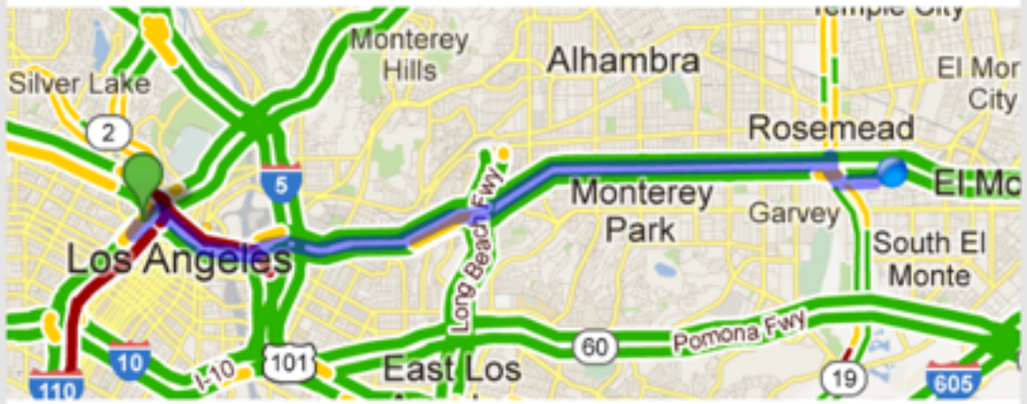
HAZE
0mph

73°

WED	THU	FRI	SAT
93°	86°	86°	86°
55°	52°	50°	48°

21 minutes to Home

Normal traffic on I-10 W



Navigate

5:35

Google

Search, or say Google

Package: SHIPPED

3:17PM, Tuesday, October 30

Huggies Little Snugglers Diapers Economy Plus,...

Package: SHIPPED

3:17PM, Tuesday, October 30

Pampers Sensitive Wipes 7x Box 448 Count

From Amazon.com
ONTRAC Two-Day Shipping

Track package

View email

Physical & Semantic Sensors

—>

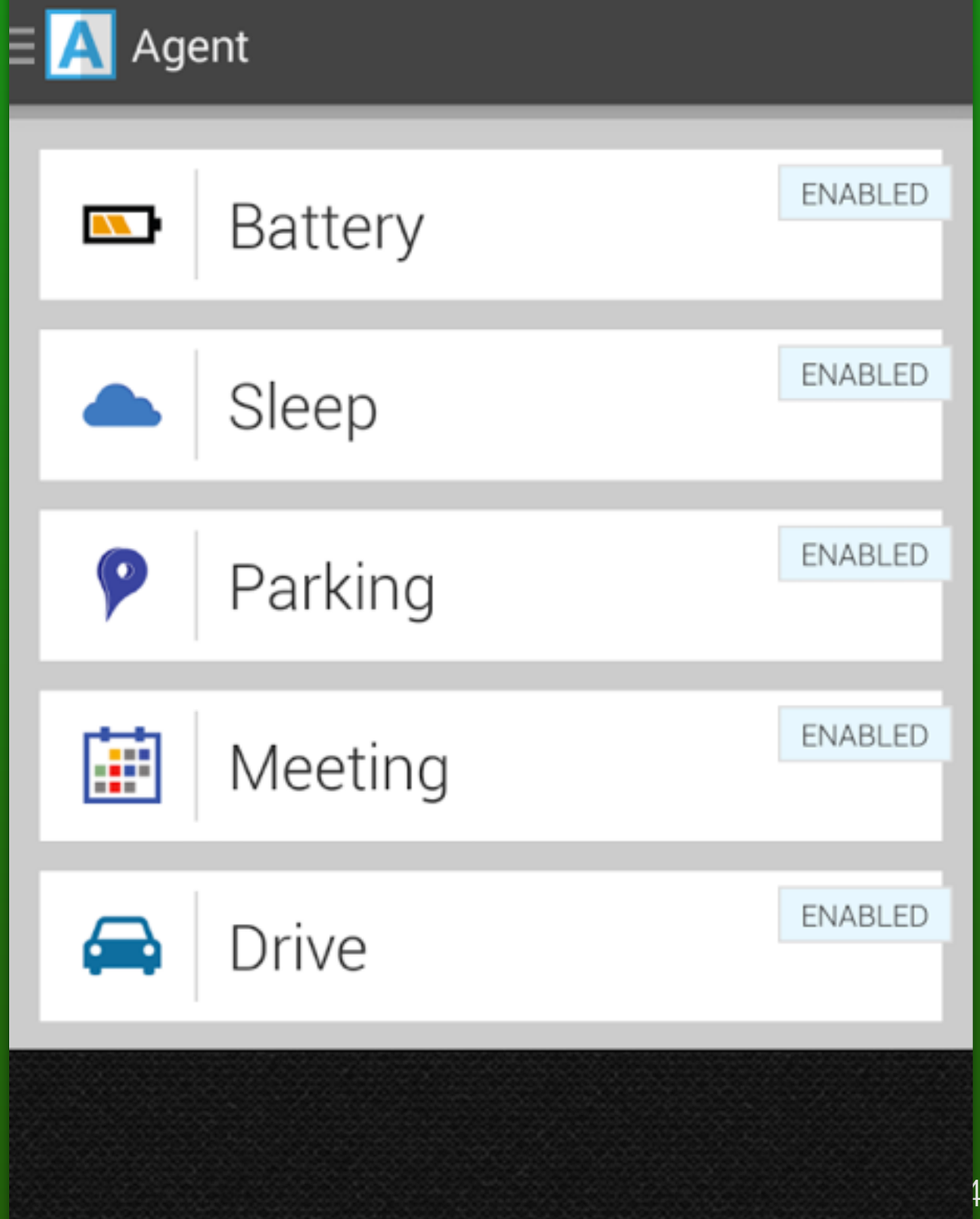
Perpetual Search

—>

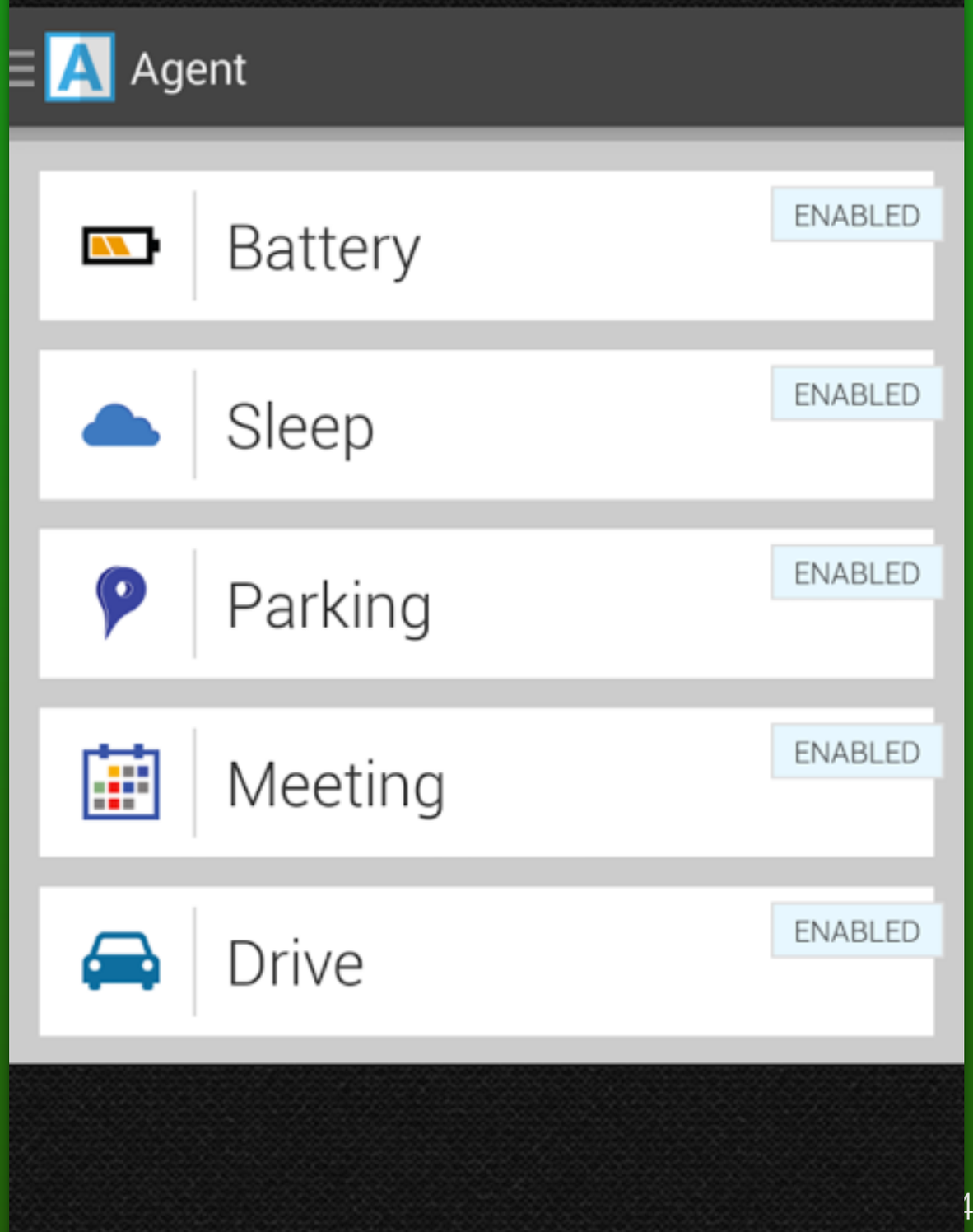
Context Relevant Information

AGENT

Five Agents that solve every day needs ...

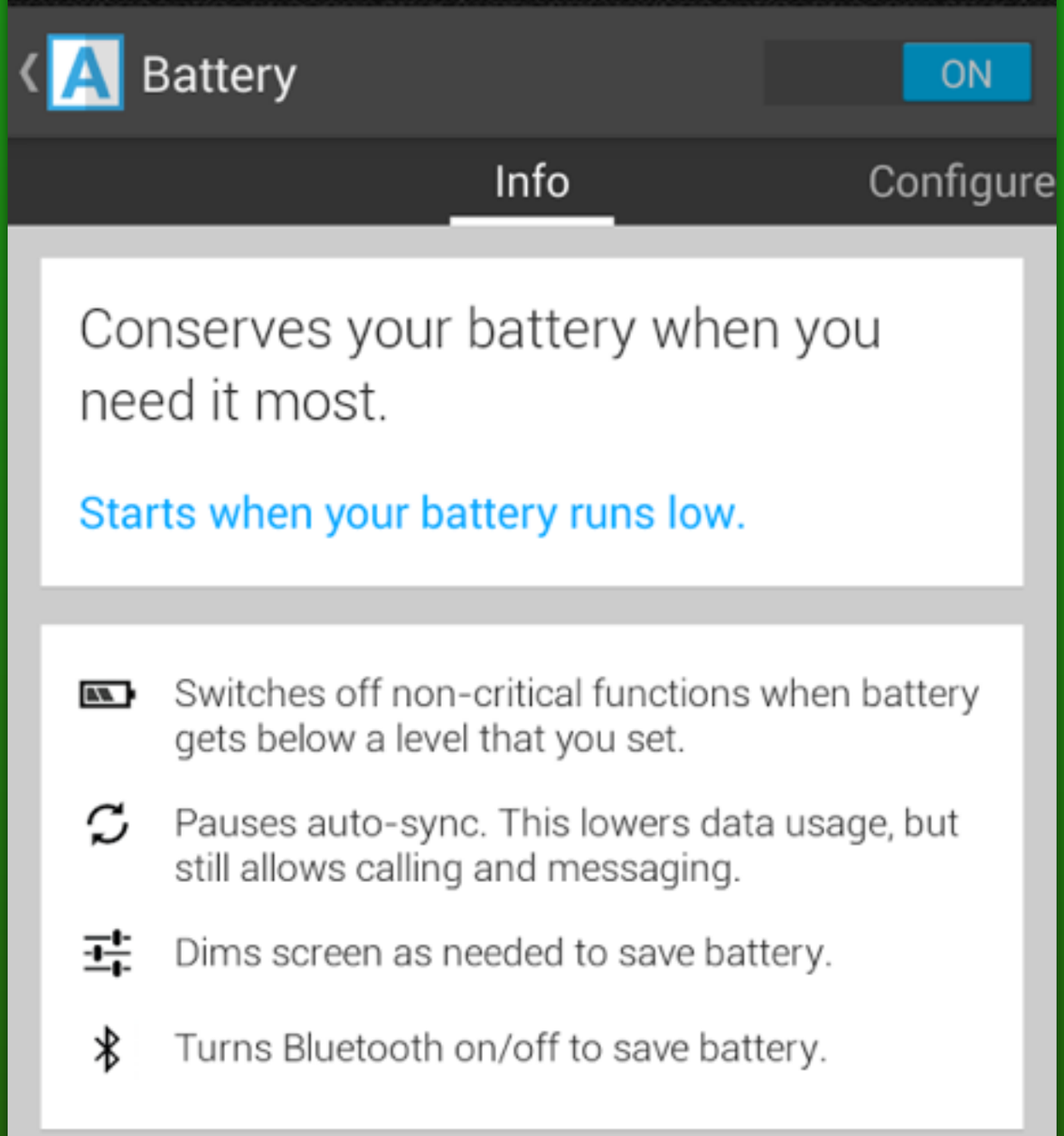


Five Agents that solve every day needs ...



Agent is transparent.

We tell you everything that Agent will do, and how it will do it.



CONTEXT = YOUR PHONE Activity*

*

Your Location
Time of Day
Your Calendar

COVER

Fast access to the right apps

Fast access to the right apps

Apps automatically change based on context

CONTEXT = YOUR PHONE Activity*

*

Time of Day
Apps Used
Your Calendar

MOVES

Today

Walk

9,682
steps

Cycle

14
min

Run

0.3
mi

Home

8:38

Walk 9 min

8:47

Transport 12 min

8:59

Run 3 min

Today

Walk

9,682
steps

Cycle

14
min

Run

0.3
mi

8:38 Home

Walk 9 min

8:47

Transport 12 min

8:59

Run 3 min

PM

12:20

Today

Walk 8 min

Fourbarrel Coffee

1:05

Walk 8 min

1:13

Work

5:25

Walk 3 min

5:28

Cycle 14 min

5:42

Walk 8 min

5:50 Home

Captures Data that can be used for creating CONTEXT Based Services

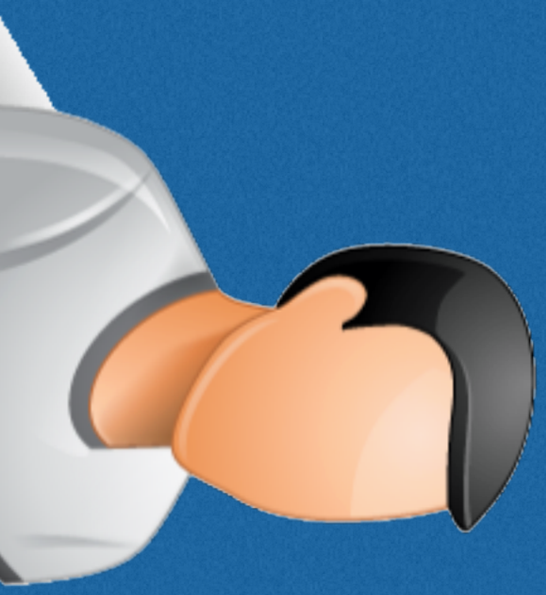
FUTURE

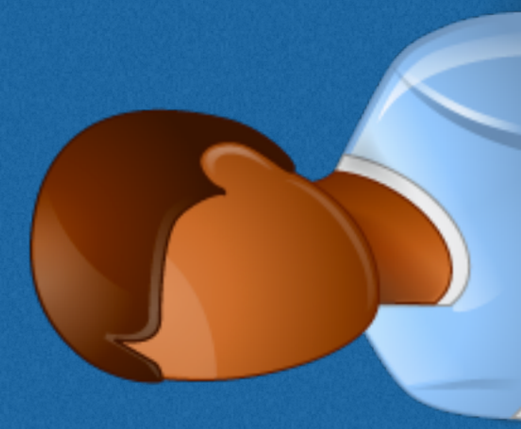
My Take on a Possible

FUTURE

My Take on a Possible

FUTURE





USE CONTEXT TO:

ENHANCE PERSONAL WELL-BEING

USE CONTEXT TO:

ENHANCE PERSONAL WELL-BEING

Identify your mood, your health, your needs and help improve them

USE CONTEXT TO:

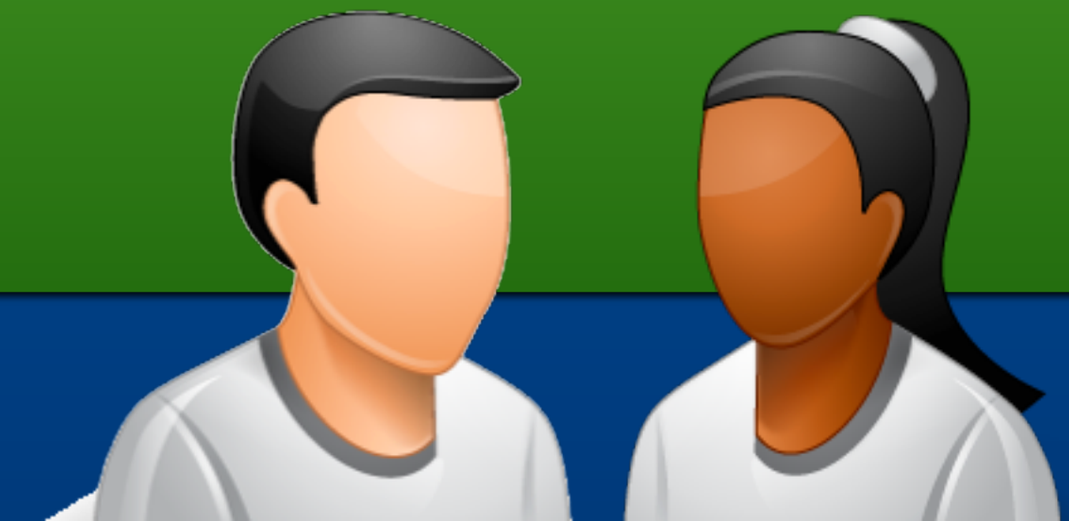
ENHANCE PERSONAL WELL-BEING

How do we Identify mood, health, needs?

How do we help to improve them?

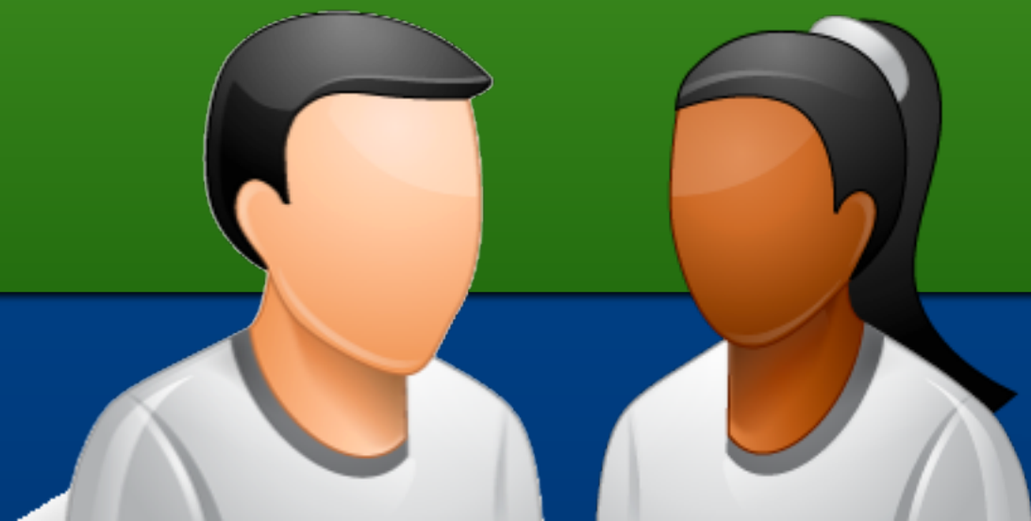
USE CONTEXT TO:

ENHANCE SOCIAL RELATIONSHIPS



USE CONTEXT TO:

Increasingly, we are ALONE TOGETHER*



*: Sherry Turkle, MIT

USE CONTEXT TO:

ie

ENHANCE SOCIAL RELATIONSHIPS

Identify close friends and find opportunities for physical meetings

USE CONTEXT TO:

2. ENHANCE SOCIAL RELATIONSHIPS

How do we identify close friends?

How do we find opportunities for physical meetings?

How do we create the meetings?

USE CONTEXT TO:

ENHANCE COMMUNITY WELL-BEING

USE CONTEXT TO:

ENHANCE COMMUNITY WELL-BEING

Identify communal needs and help take care of them

META-Context

USE CONTEXT TO:

ENHANCE COMMUNITY WELL-BEING

How do we identify communal needs?

Who decides?

How do we help take care of them?

Conclusions

- Context based Computing is not new
- Mobile technology puts processing power and sensors in our *pockets*
- Cloud Computing puts large scale processing into our *products*
- Today: experimentation with the first real mobile context based services
- Tomorrow: maturity leads to interacting with deeper and more meaningful contexts

It is more than figuring out how to sell more ads

It has the potential to improve the lives of individuals, groups and communities!

It looks like it will be very INTERESTÍNG!

BON VOYAGE !

amnoid@gmail.com