



# Anatomy of Mobile TV Use Cases

Exploratory Field Study  
Seoul 2005

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Mobile HCI Group


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Seoul, South Korea, 8 in-depth participants  
Contextual and home interviews, day mapping  
Street observation, artifacts, use





A woman with dark hair, wearing a white t-shirt and a dark blazer, holds a silver Nokia slider phone in her right hand. The phone's screen displays a video of a person in a blue shirt. The background is a blurred city street at night with lights and a man in a blue shirt and tie in the distance.

Cui Yanqing  
Younghee Jung  
Boreum Choi  
Jinwoo Kim  
Inseong Lee  
Jieun Yoon

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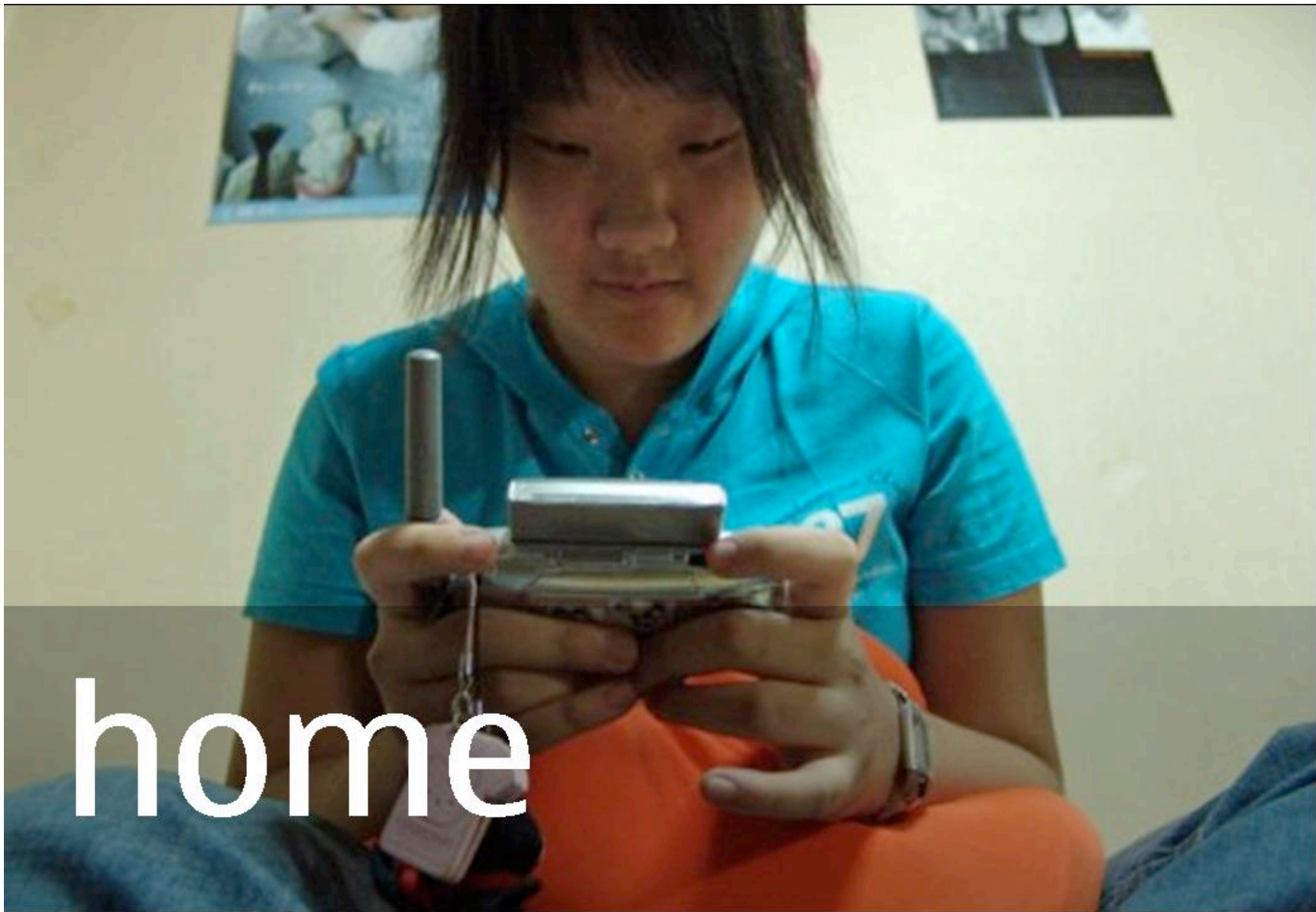


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(limits of this  
research)



four use cases







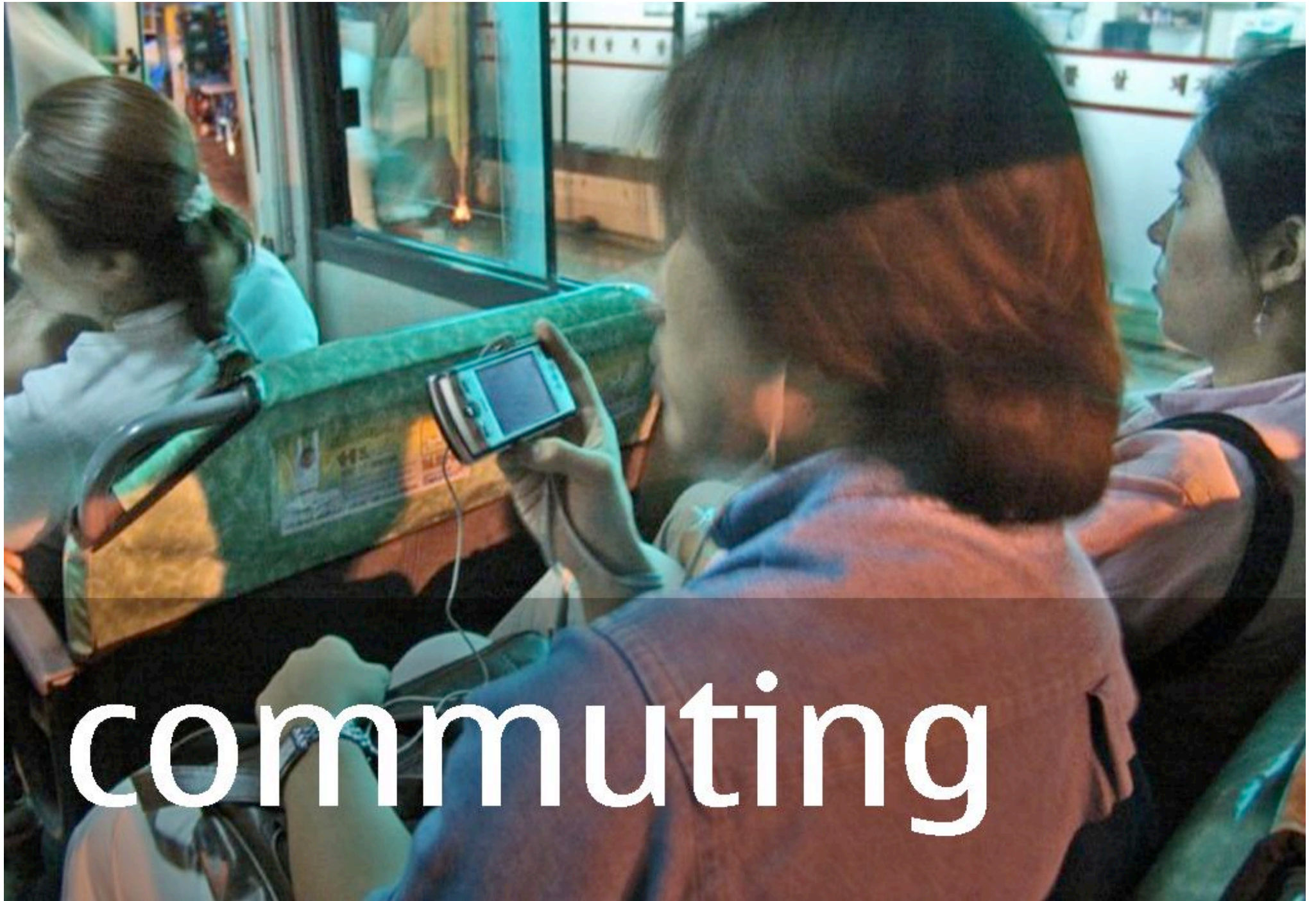
commuting





~~commuting~~





commuting





micro breaks





~~micro~~ breaks





macro  
~~micro~~<sup>^</sup> breaks





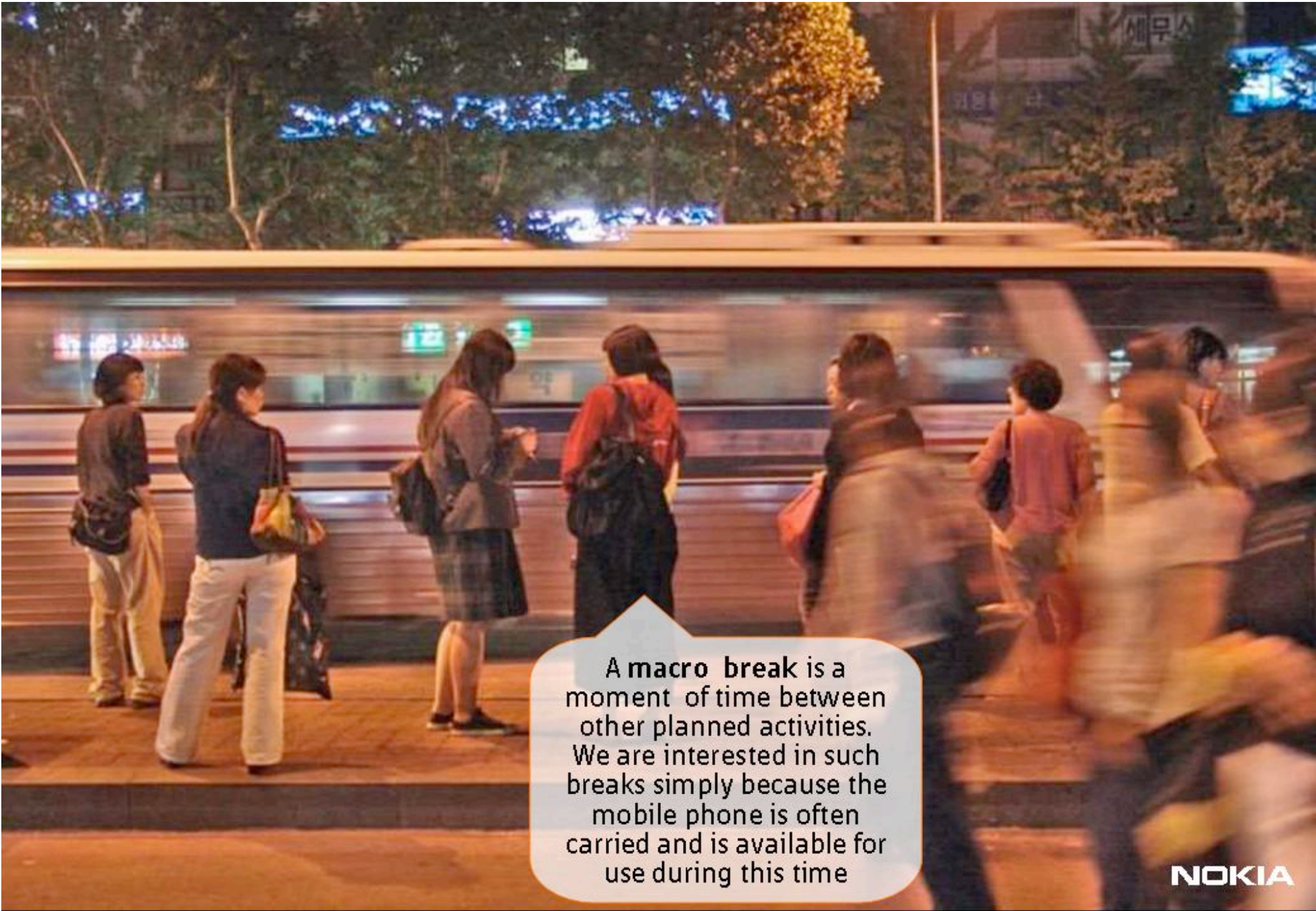
**macro-breaks**





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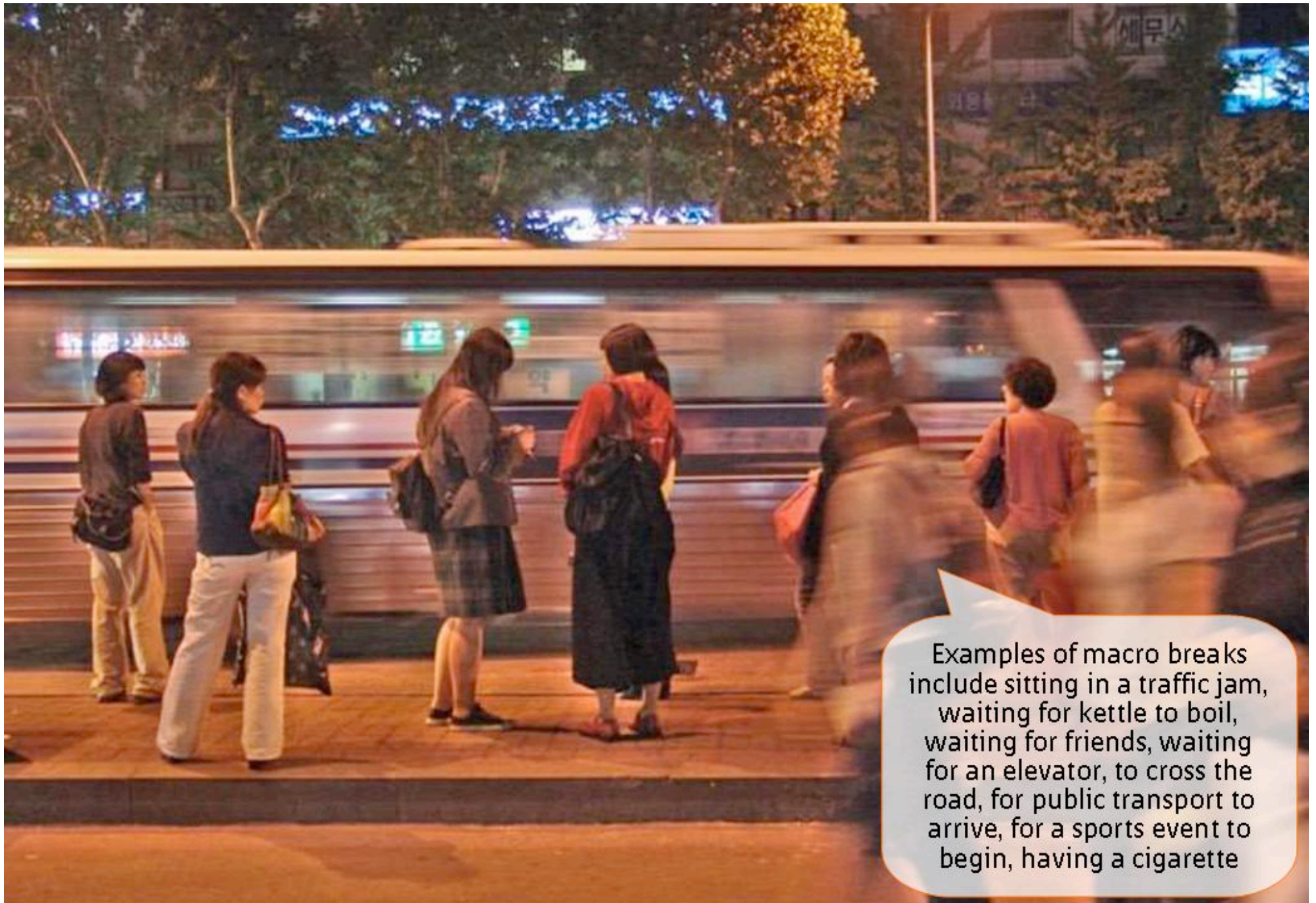




A **macro break** is a moment of time between other planned activities. We are interested in such breaks simply because the mobile phone is often carried and is available for use during this time

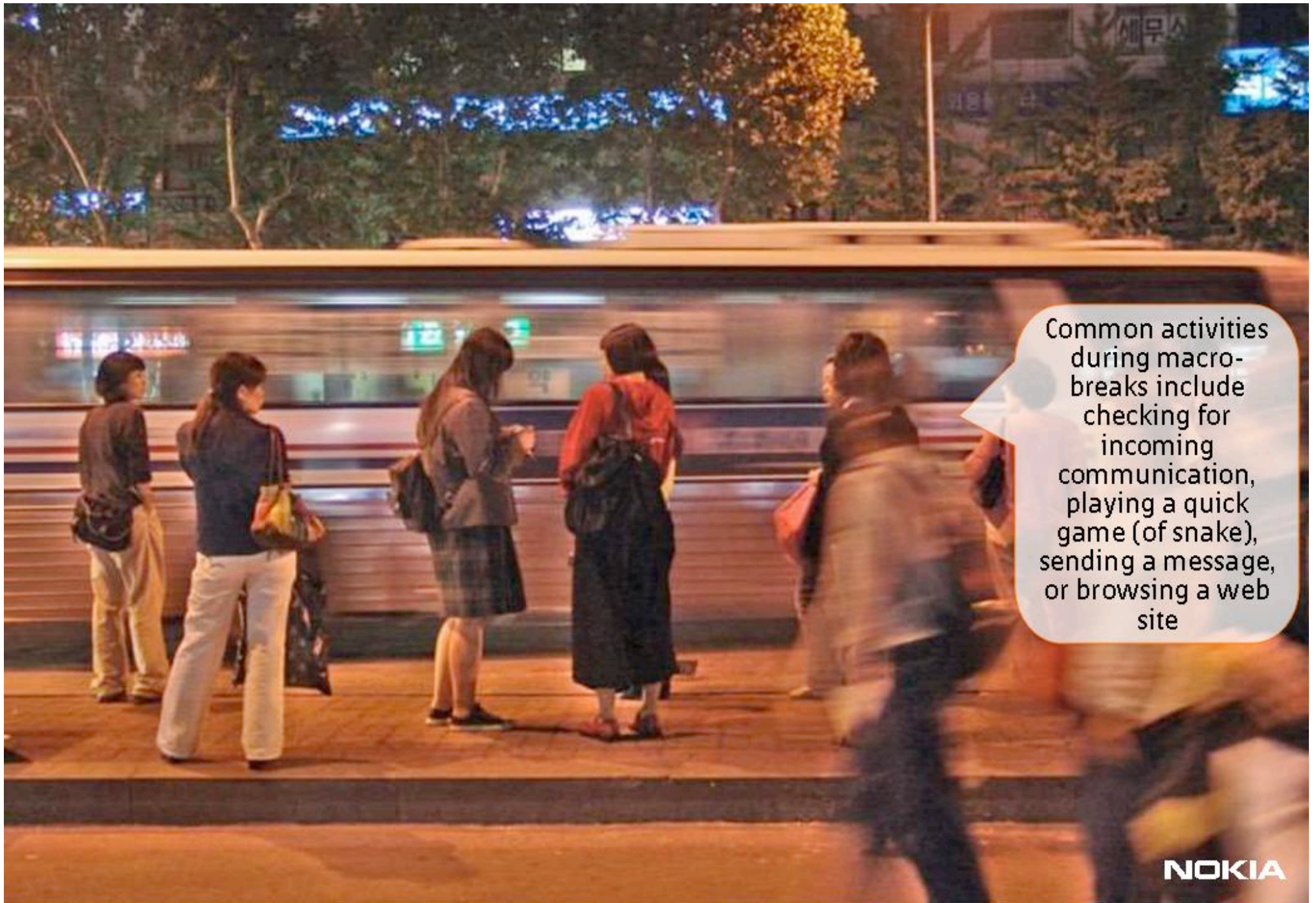
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Examples of macro breaks include sitting in a traffic jam, waiting for kettle to boil, waiting for friends, waiting for an elevator, to cross the road, for public transport to arrive, for a sports event to begin, having a cigarette

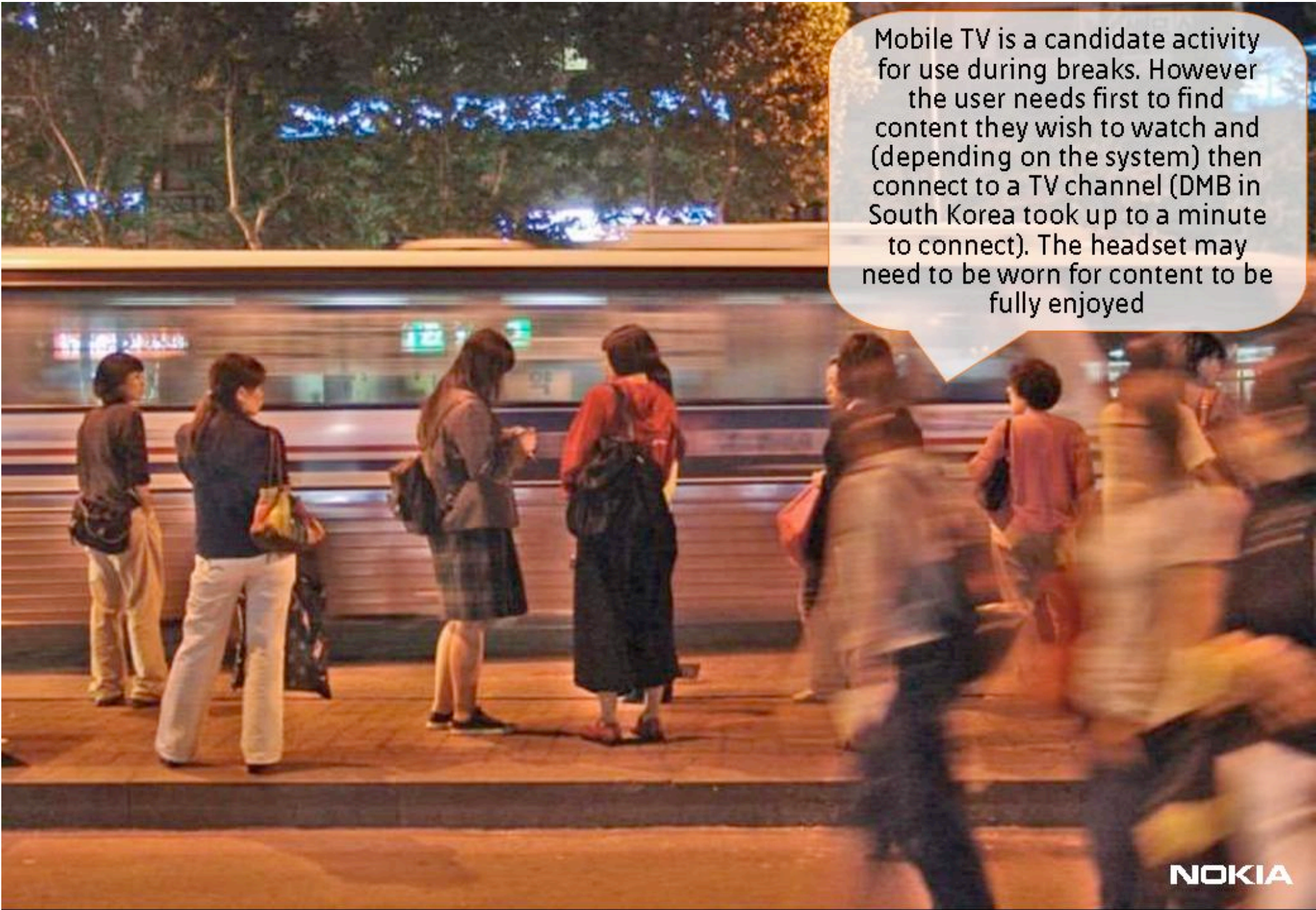




Common activities during macro-breaks include checking for incoming communication, playing a quick game (of snake), sending a message, or browsing a web site

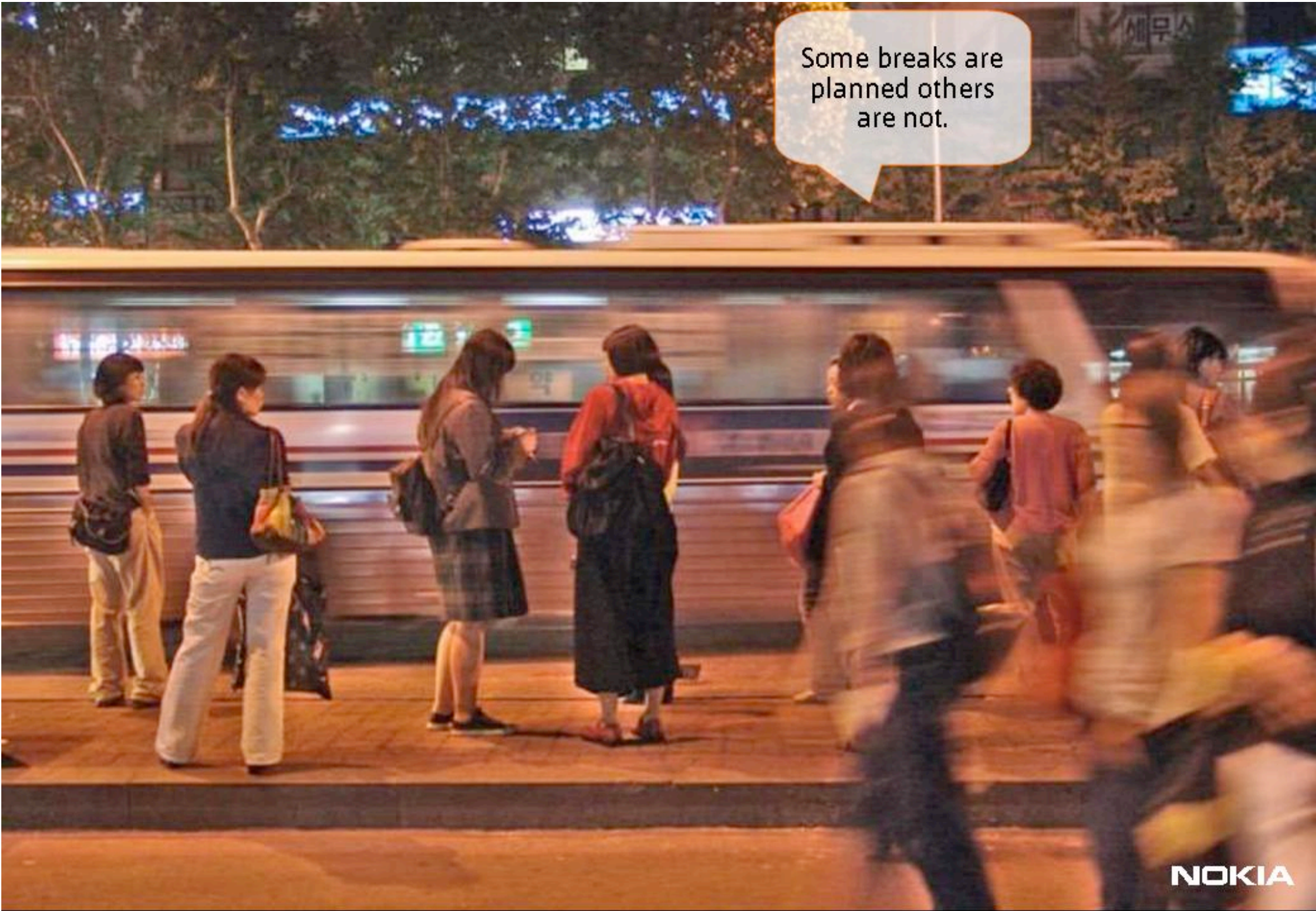
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A photograph of a train station at night. A train is blurred in motion, passing through the frame. Several people are standing on the platform, waiting. The scene is illuminated by warm station lights, and there are blue decorative lights on the trees in the background. A speech bubble is overlaid on the right side of the image.

Mobile TV is a candidate activity for use during breaks. However the user needs first to find content they wish to watch and (depending on the system) then connect to a TV channel (DMB in South Korea took up to a minute to connect). The headset may need to be worn for content to be fully enjoyed



A photograph of a city street at night. A white bus is blurred as it moves from left to right across the frame. On the sidewalk, several people are standing and waiting. In the foreground, a person is blurred while walking towards the right. The background shows trees and blue decorative lights. A speech bubble is in the upper right corner.

Some breaks are  
planned others  
are not.

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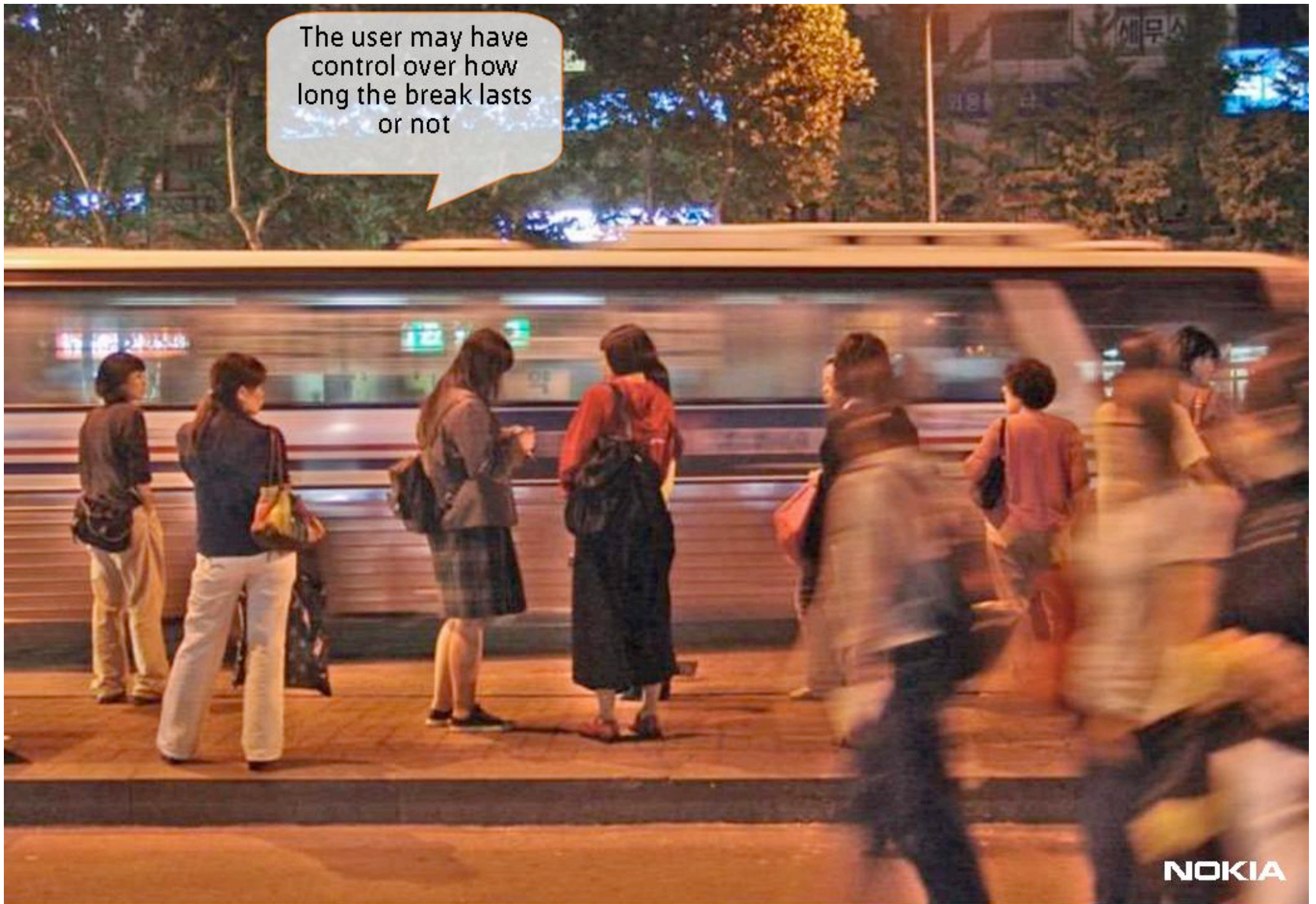


The length of the  
break time may be  
predictable or not.

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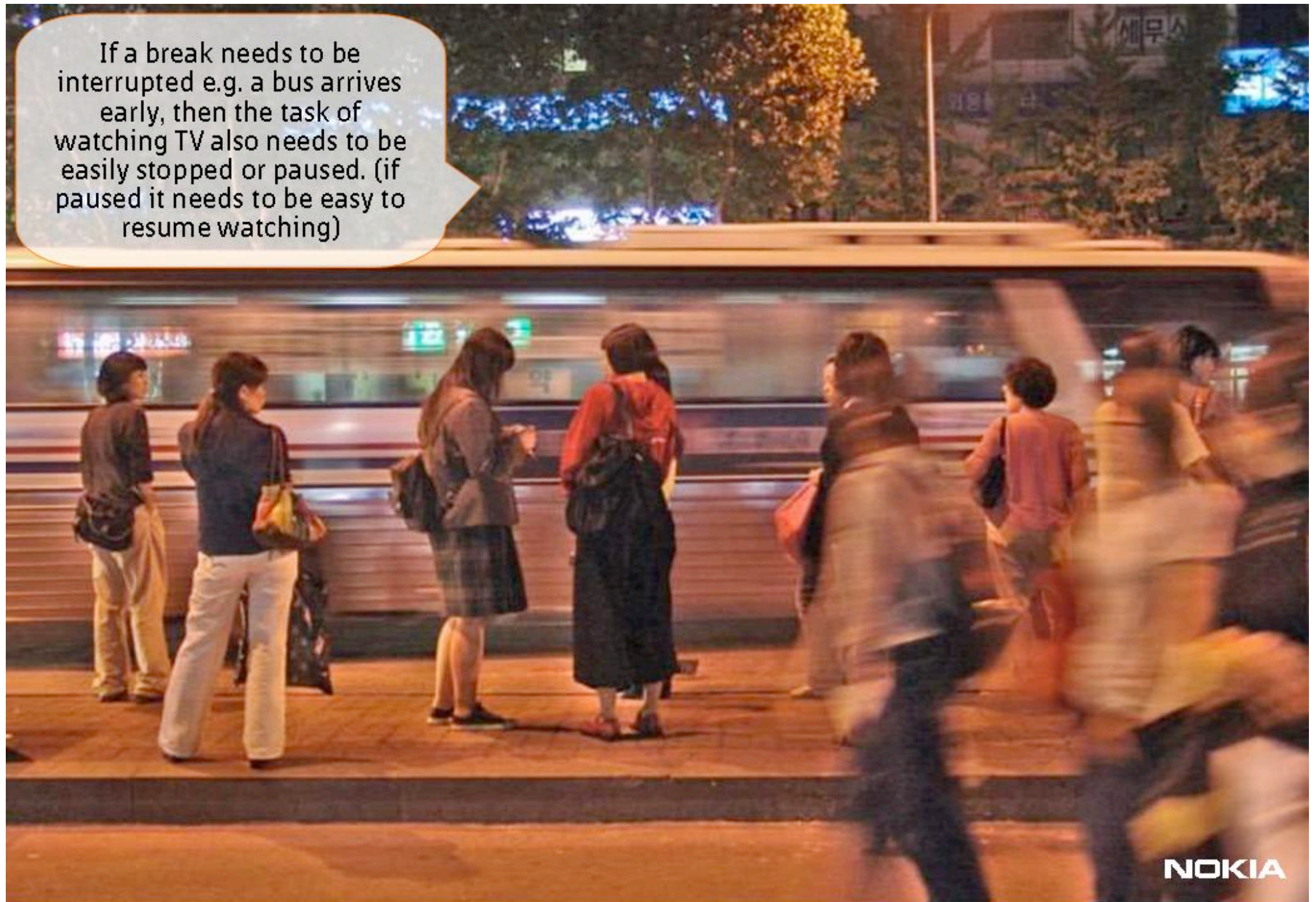
The user may have control over how long the break lasts or not



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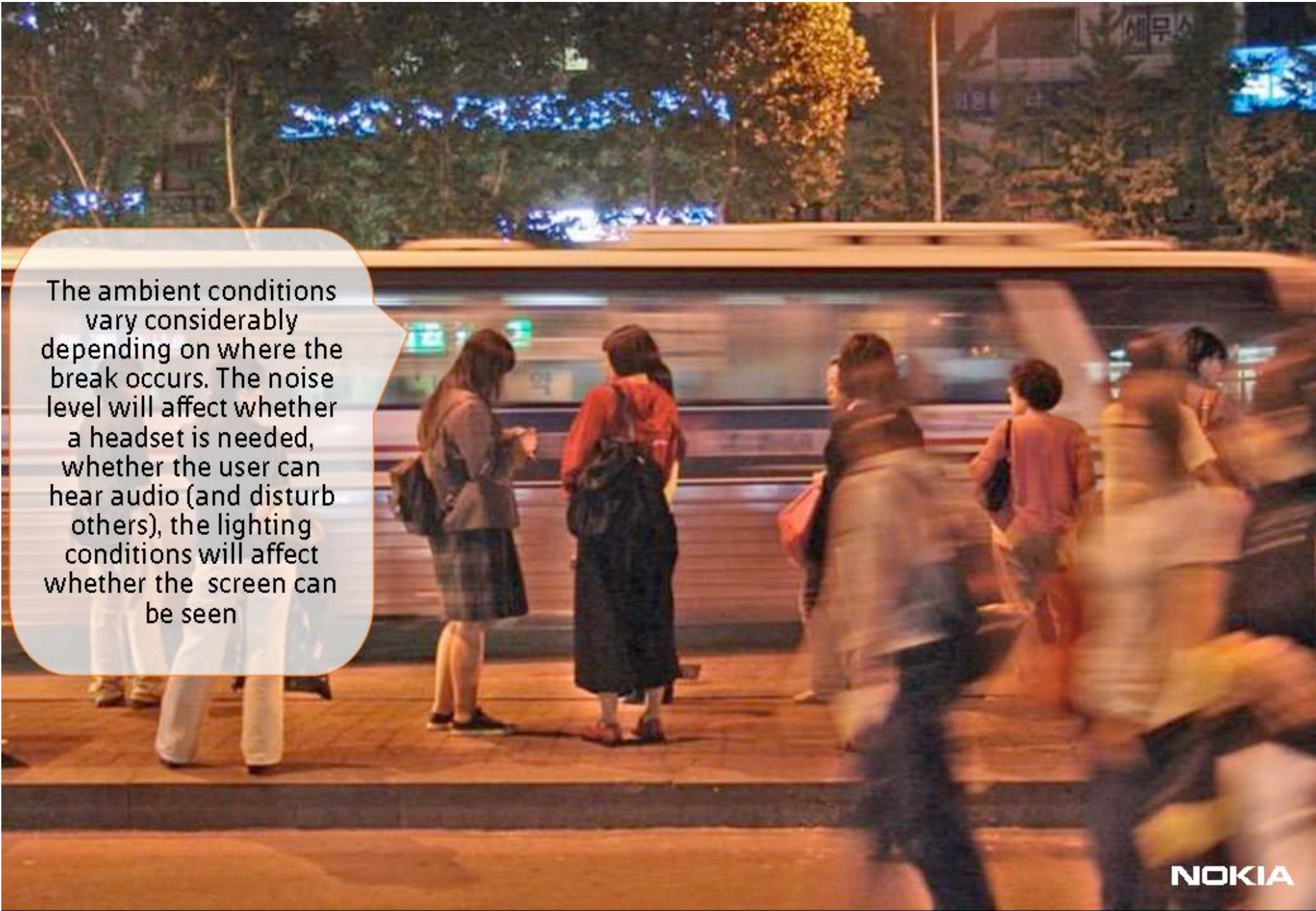


If a break needs to be interrupted e.g. a bus arrives early, then the task of watching TV also needs to be easily stopped or paused. (if paused it needs to be easy to resume watching)



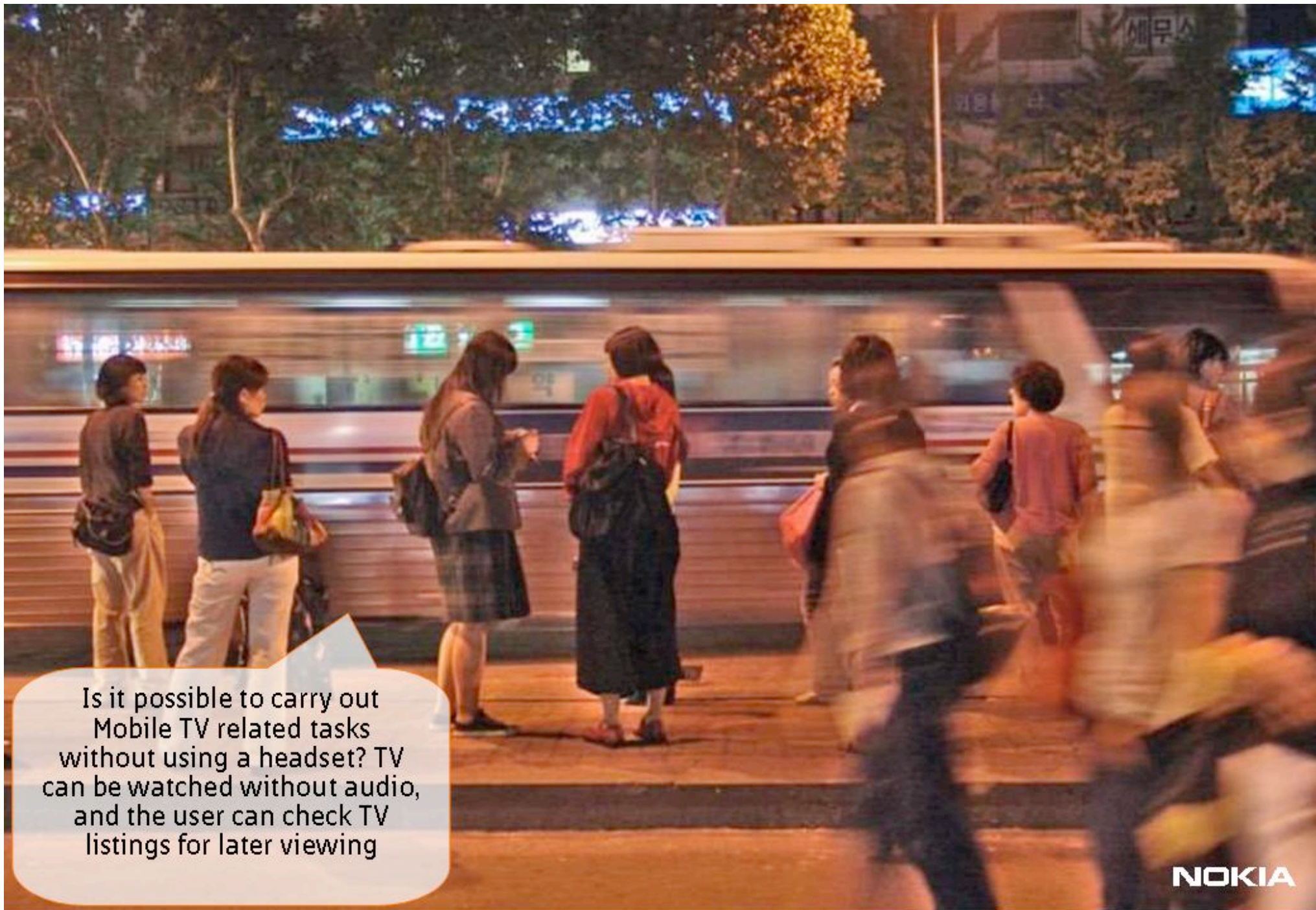
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The ambient conditions vary considerably depending on where the break occurs. The noise level will affect whether a headset is needed, whether the user can hear audio (and disturb others), the lighting conditions will affect whether the screen can be seen

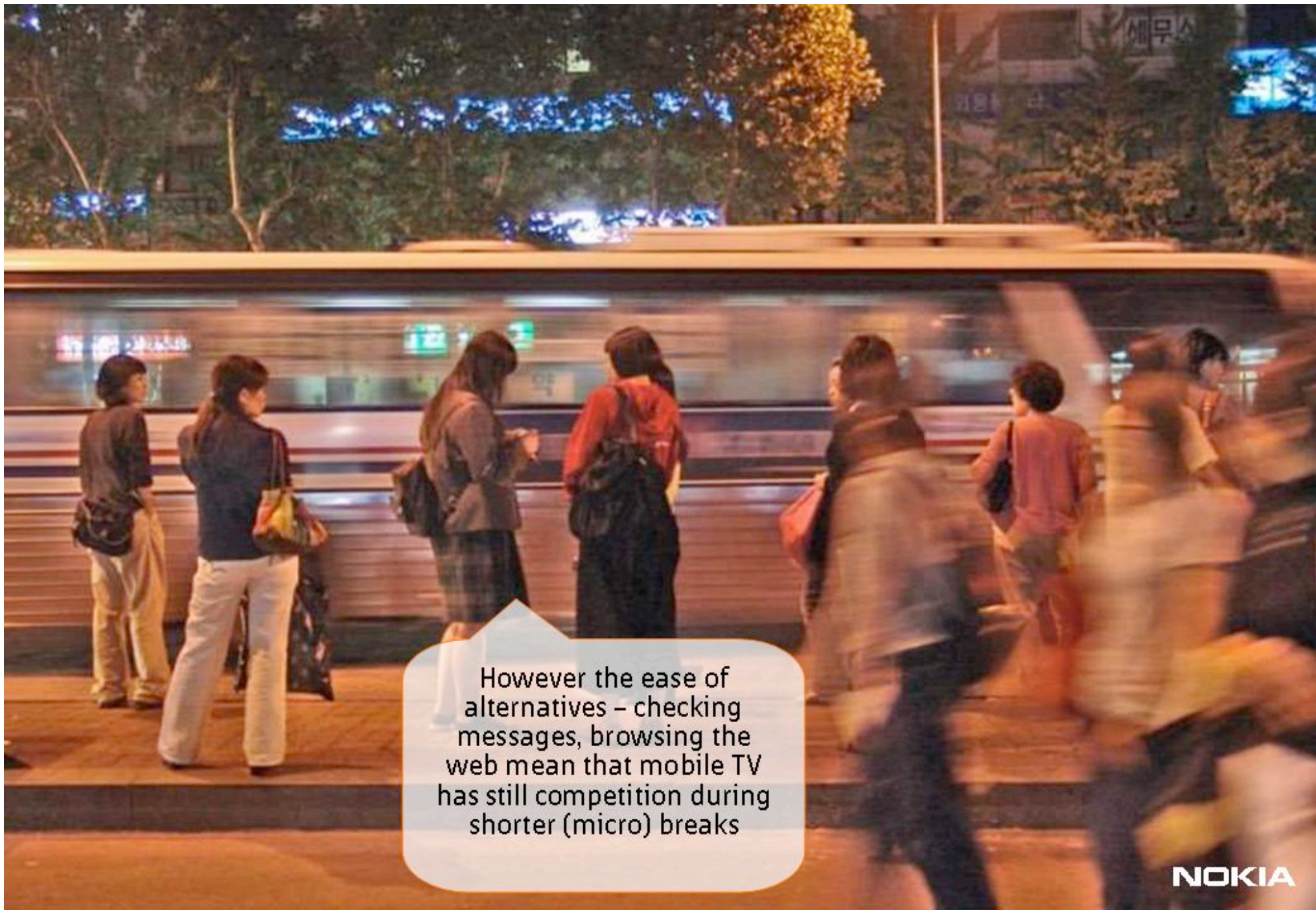




Is it possible to carry out  
Mobile TV related tasks  
without using a headset? TV  
can be watched without audio,  
and the user can check TV  
listings for later viewing

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However the ease of alternatives – checking messages, browsing the web mean that mobile TV has still competition during shorter (micro) breaks



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The user may have control over how long the break lasts or not

The length of the break time may be predictable or not.

Mobile TV is a candidate activity for use during breaks. However the user needs first to find content they wish to watch and (depending on the system) then connect to a TV channel (DMB in South Korea took up to a minute to connect). The headset may need to be worn for content to be fully enjoyed

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Is it possible to carry out Mobile TV related tasks without using a headset? TV can be watched without audio, and the user can check TV listings for later viewing

How many alternatives - checking messages, browsing the web etc - has still short

**A macro break** is a moment of time between other planned activities. We are interested in such breaks simply because the mobile phone is often carried and is available for use during this time

Examples of macro breaks include sitting in a traffic jam, waiting for kettle to boil, waiting for friends, waiting for an elevator, to cross the road, for public transport to arrive, for a sports event to begin, having a cigarette



**evening commute**








Mornings tend to include high pressure tasks such as eating breakfast, managing appearance, getting into office/school on time which leave less time for relaxed mobile TV watching. However it varies between cultures





A photograph of a woman with dark hair, seen from the back, wearing a blue button-down shirt. She is holding a silver Nokia mobile phone in her right hand, looking at the screen. She is seated on a train, with a window and other passengers visible in the background. A speech bubble is overlaid on the image, containing text about Mobile TV usage during commutes. The Nokia logo is in the bottom right corner.

A one hour commute may include only 15 minutes time which is suitable for watching Mobile TV. User may switch from audio to T.V and back during the commute (one bonus- at least the battery wont run out)

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Externalities such as reflections caused by bright lights, negotiating traffic and potholes in the road make watching TV less enjoyable

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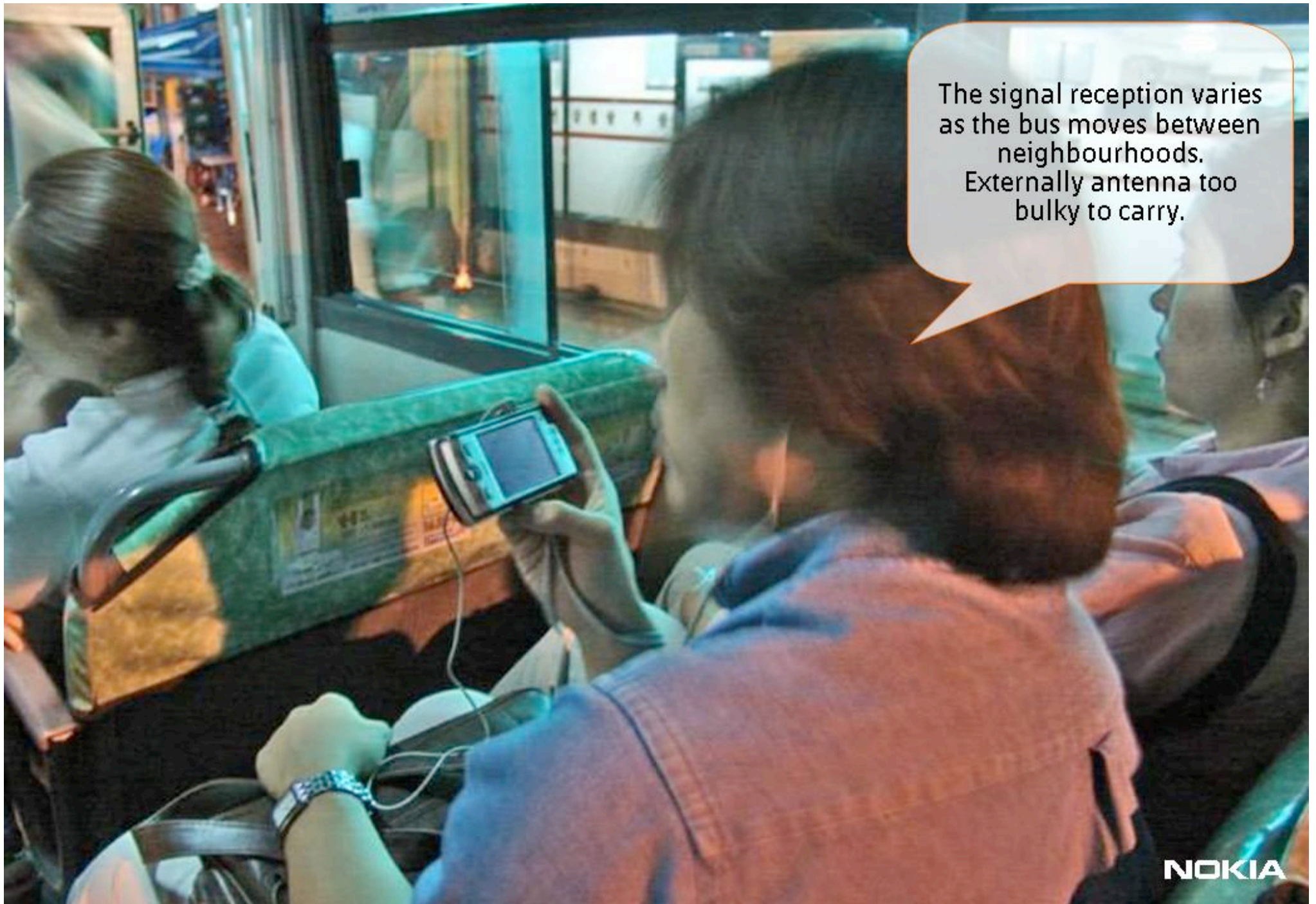


Arm resting  
on bag  
supporting  
use

The image shows a woman from behind, holding a silver Nokia phone. She is standing on a train platform, and her left arm is resting on a brown bag to support herself while using the phone. A speech bubble points to her arm with the text 'Arm resting on bag supporting use'. In the background, there is a train window and another person. The Nokia logo is in the bottom right corner.

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The signal reception varies as the bus moves between neighbourhoods. Externally antenna too bulky to carry.

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During rainy weather the windows may steam up making it harder to track the location of the vehicle.  
(less time to devote to mobile TV)  
Also need to hold umbrella and cope with wet

**NOKIA**





Limited privacy  
watching in close  
public space

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Watching in public requires use of a headset to avoid disturbing others. Sound from announcements from the bus conductor disturb viewing

**NOKIA**





Use of headsets varies from culture to culture. If headsets are not normally worn then setup takes longer

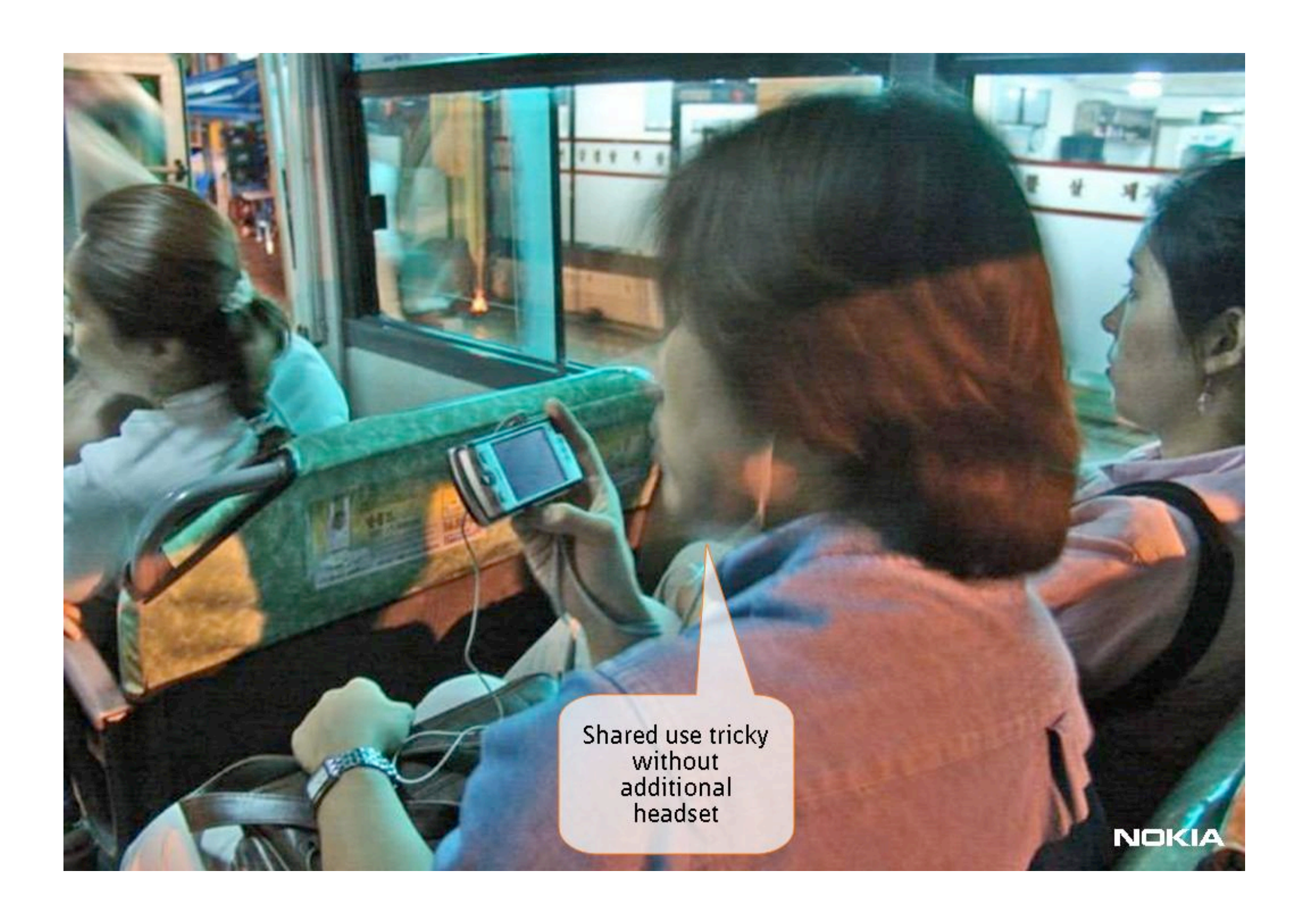




What level of enjoyment is possible without headset?  
E.g. subtitles or tagging content to watch at a later time

**NOKIA**

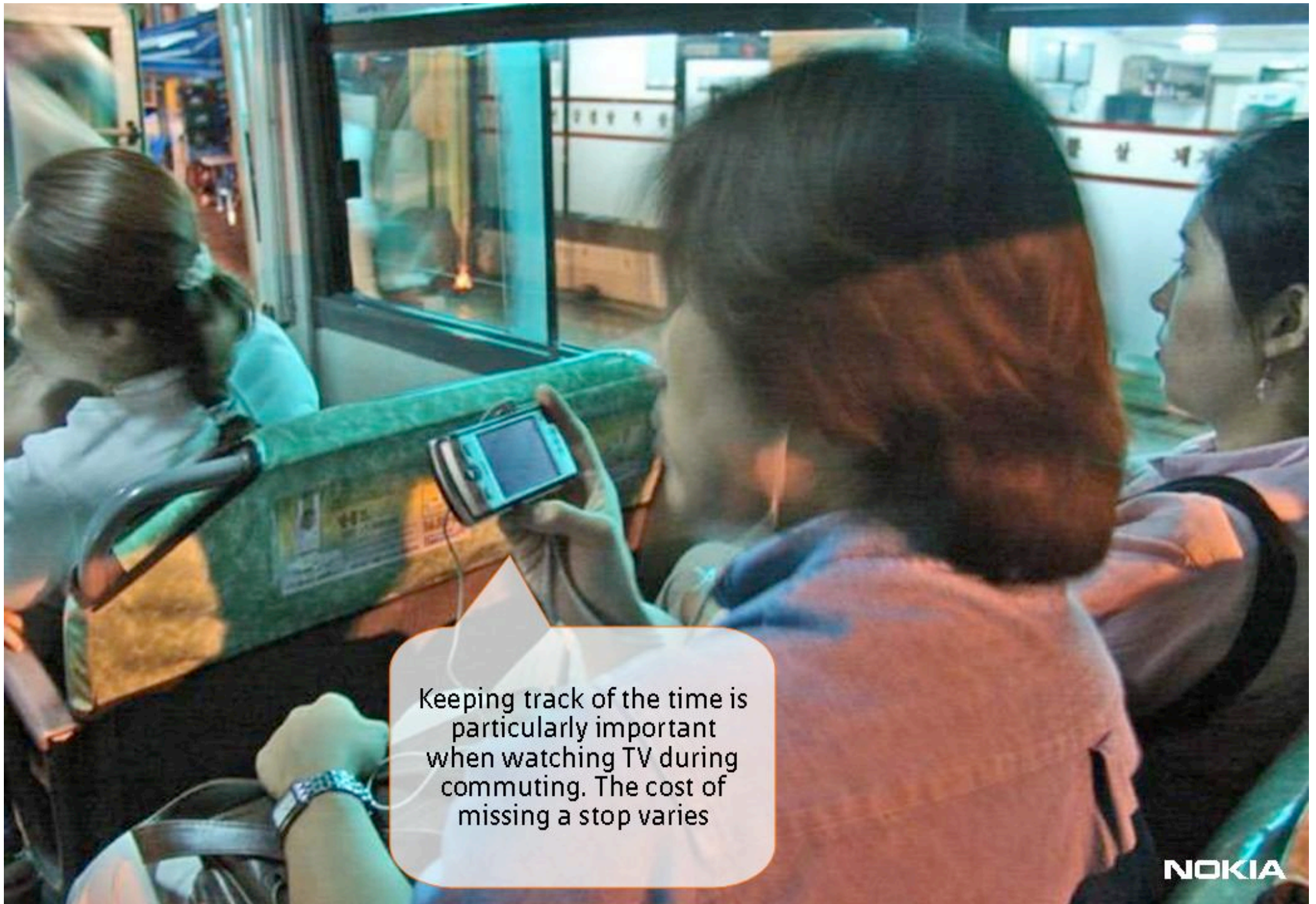


A photograph showing a woman in a pink shirt from behind, holding a silver Nokia phone. She is in a public space, possibly a transit station, with other people and glass barriers visible in the background. A speech bubble points to the phone. The Nokia logo is in the bottom right corner.

Shared use tricky  
without  
additional  
headset

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Keeping track of the time is particularly important when watching TV during commuting. The cost of missing a stop varies

**NOKIA**






Watching TV means he is not able to keep an eye on his bag = higher risk of theft. Bag is likely to rest on lap, and the mobile TV will rest on the bag

**NOKIA**






There are strong differences in how people commute in different cultures. For example 75% of Americans commute in sole occupancy cars.

NOKIA




A photograph of a woman in a subway car, seen from behind, holding a large, silver, tablet-like device. She is wearing a light blue jacket and a watch. The device is connected to a cable. In the background, another person is visible, and the subway interior with windows and doors is shown. A speech bubble is overlaid on the left side of the image.

Mobile TV is too difficult  
to watch for standing  
passengers – the device  
is too heavy and hands  
maybe required for  
support at short notice  
(more for busses than  
for subway)

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A woman with dark hair tied back, wearing a pink shirt, is seen from the back, holding a silver Nokia mobile phone. She is standing on a train platform, looking at the phone's screen. A white speech bubble with an orange border is positioned to her left, containing the text "Music is a better mood regulator than TV in the mornings". In the background, a train is visible on the tracks, and another person is partially visible to the right. The scene is lit with the warm, orange light of a train platform.

Music is a better mood  
regulator than TV in  
the mornings

**NOKIA**



Mornings tend to include high pressure tasks such as eating breakfast, managing appearance, getting into office/school on time which leave less time for relaxed mobile TV watching.

However it varies between

Mobile TV cultures

Music is a better mood regulator than TV in the mornings. Hands maybe required for support at short notice (more for busses than for subway)

There are strong differences in how people commute in different cultures. For example 75% of

Americans commute in solo occupancy cars. Watching TV means he is not able to keep an eye on his bag = higher risk of theft. Bag is likely to rest on lap, and the mobile TV will rest on the bag

A one hour commute may include only 15 minutes time which is suitable for watching Mobile TV. User may switch from audio to T.V and back during the commute (one bonus- at least the battery wont run out)

Externalities such as reflections caused by bright lights, negotiating traffic and potholes on road make less enjoyable. The signal reception varies as the bus moves between neighbourhoods. Externally antenna too bulky to carry.

During rainy weather the windows may steam up making it harder to track the location of the vehicle. (less time to devote to mobile TV)

Also need to hold umbrella and cope with wet

Limited privacy watching in close public space

Watching in public requires use of a headset to avoid disturbing other. Sound from announcements from the bus conductor disturb

viewing

What level of enjoyment is possible without headset? Use of headsets varies from culture to culture. E.g. subtitles or tagging content to watch at a later time. Headsets are not normally worn then setup takes longer

Keeping track of the time is important with Shared use tricky without additional headset



**home use**

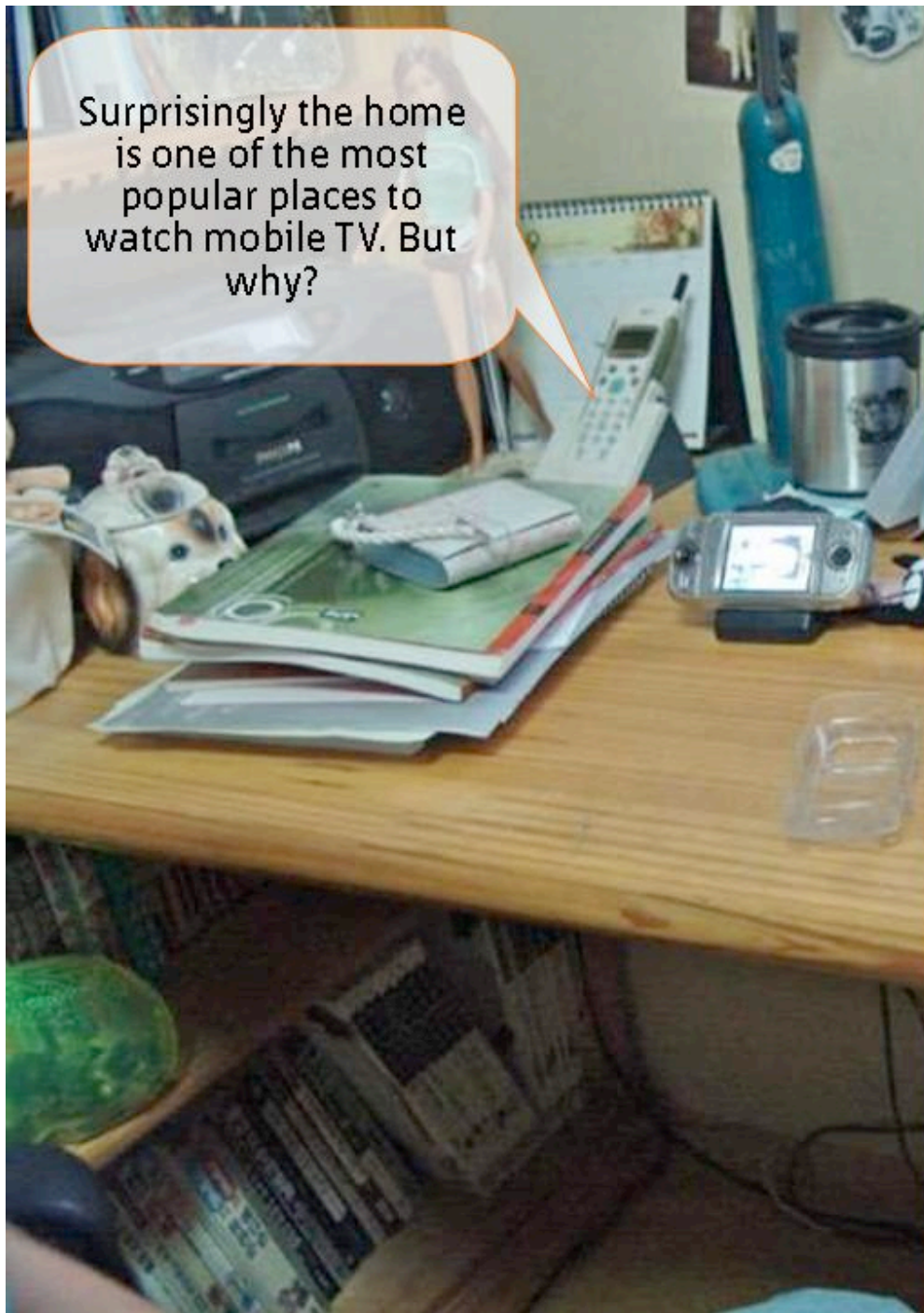




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Surprisingly the home  
is one of the most  
popular places to  
watch mobile TV. But  
why?



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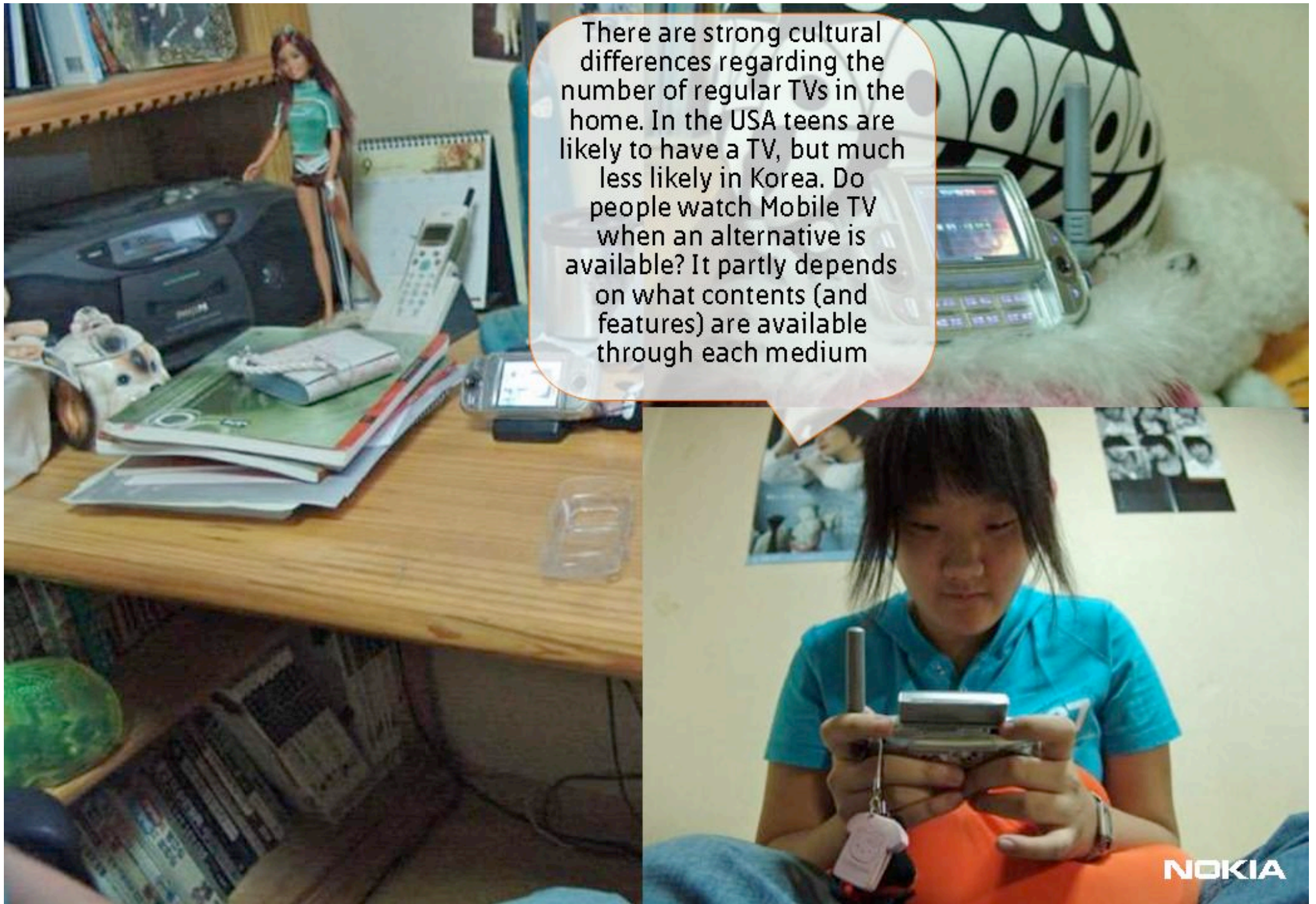
Using the main (shared) TV in the living room requires negotiation with other family members, whereas the user is in control of mobile TV



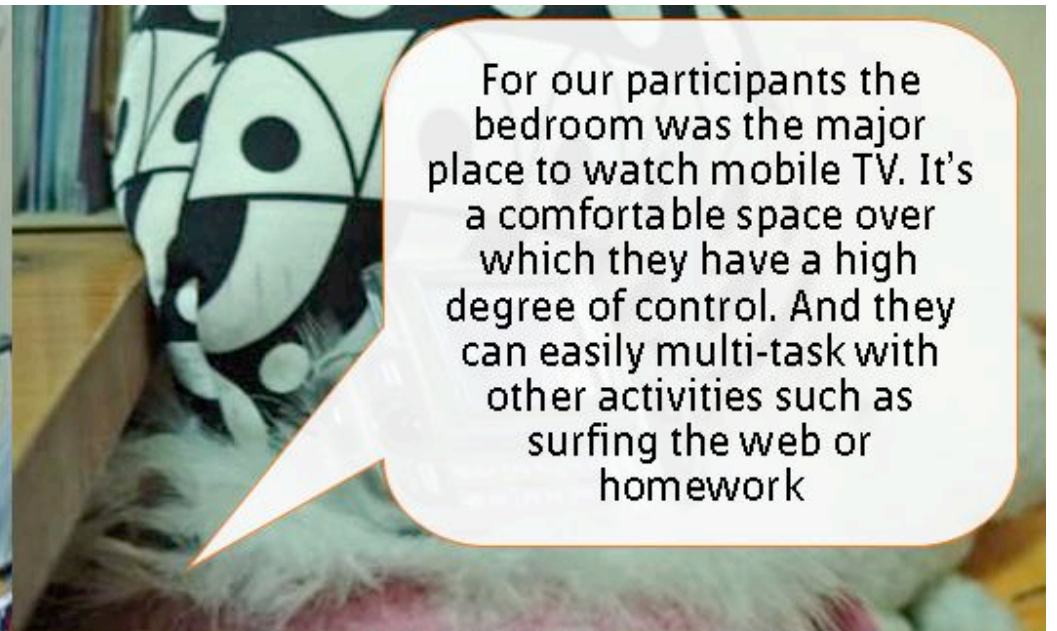
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There are strong cultural differences regarding the number of regular TVs in the home. In the USA teens are likely to have a TV, but much less likely in Korea. Do people watch Mobile TV when an alternative is available? It partly depends on what contents (and features) are available through each medium



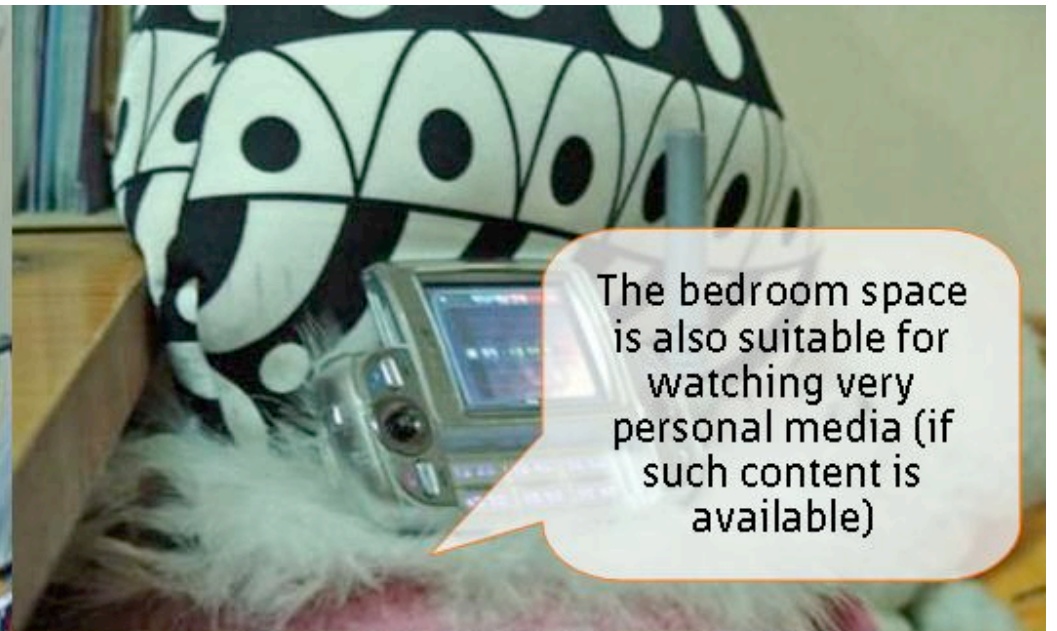




For our participants the bedroom was the major place to watch mobile TV. It's a comfortable space over which they have a high degree of control. And they can easily multi-task with other activities such as surfing the web or homework







The bedroom space is also suitable for watching very personal media (if such content is available)



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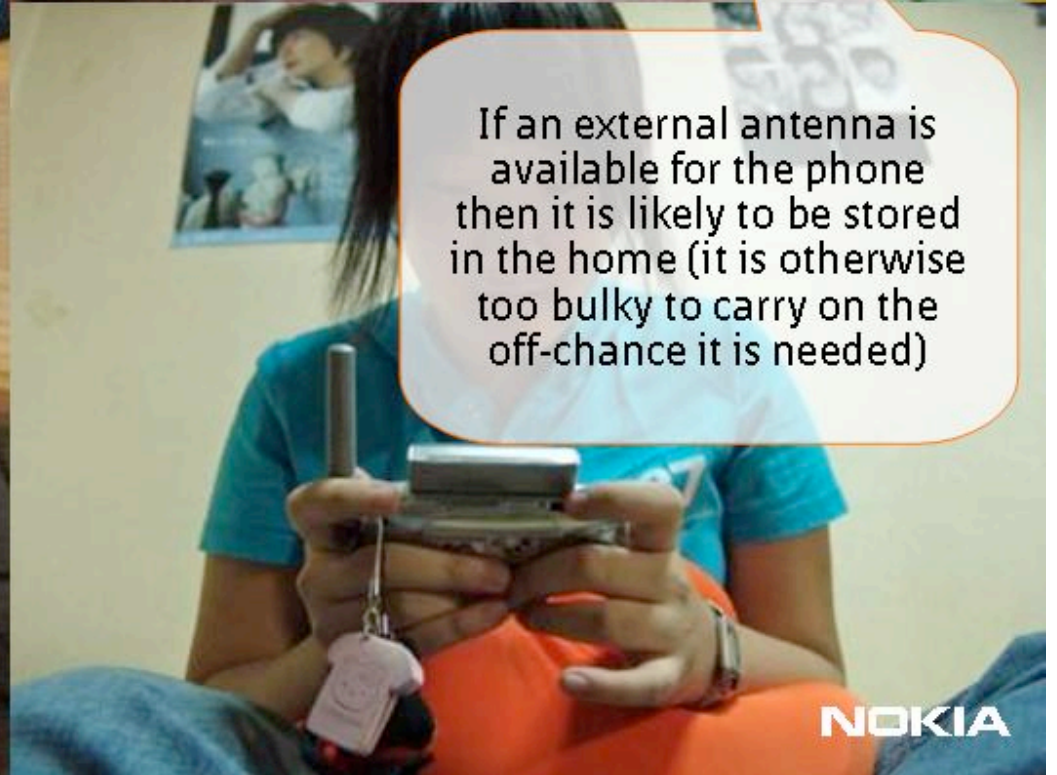








If an external antenna is available for the phone then it is likely to be stored in the home (it is otherwise too bulky to carry on the off-chance it is needed)



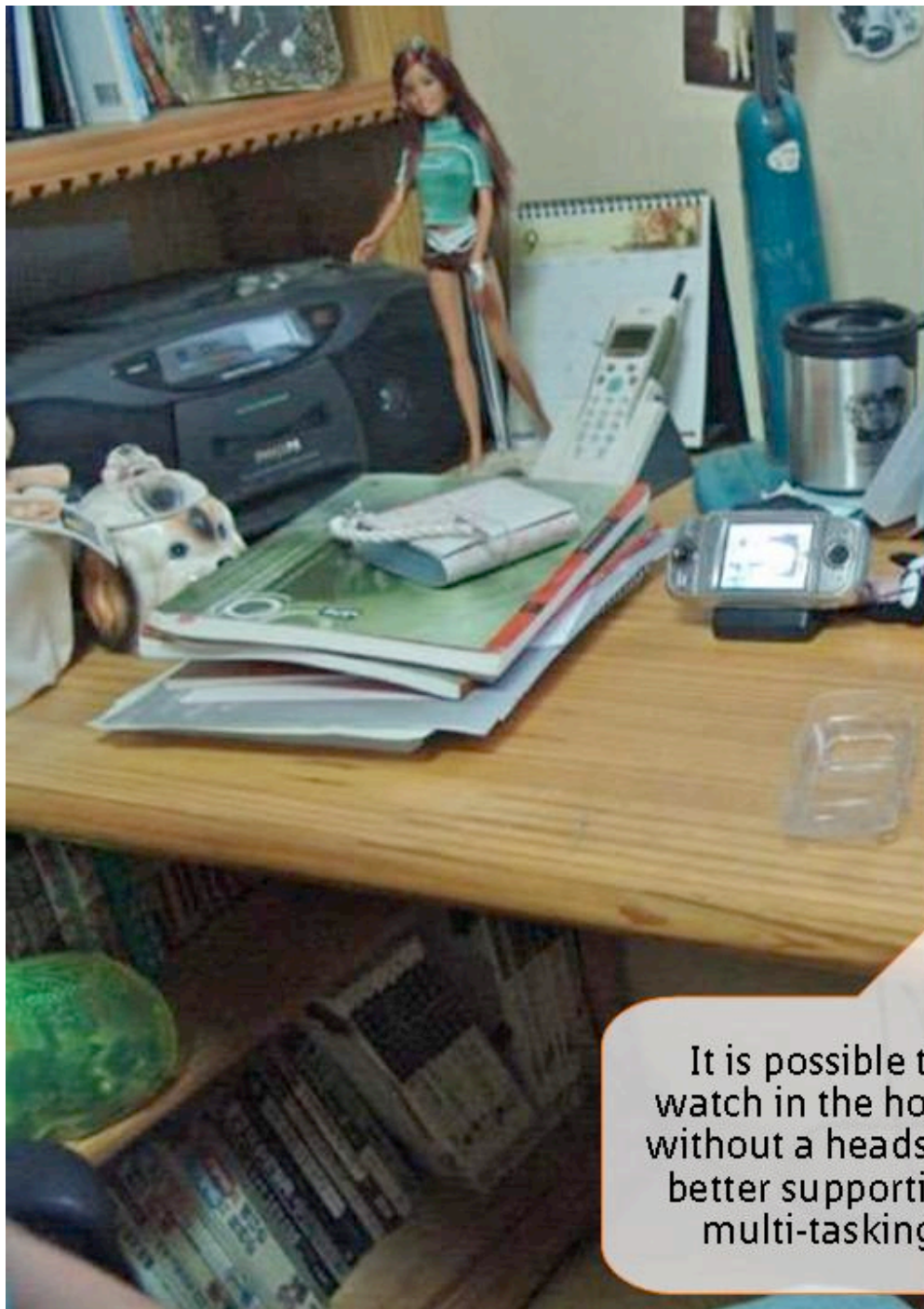
**NOKIA**





The home space flexibly supports different ways of watching TV – leaning forward and leaning back, active and ambient watching. Leaning forward (shown) works well when the user is required to multi-task other activities on the phone – taking calls, sending messages.

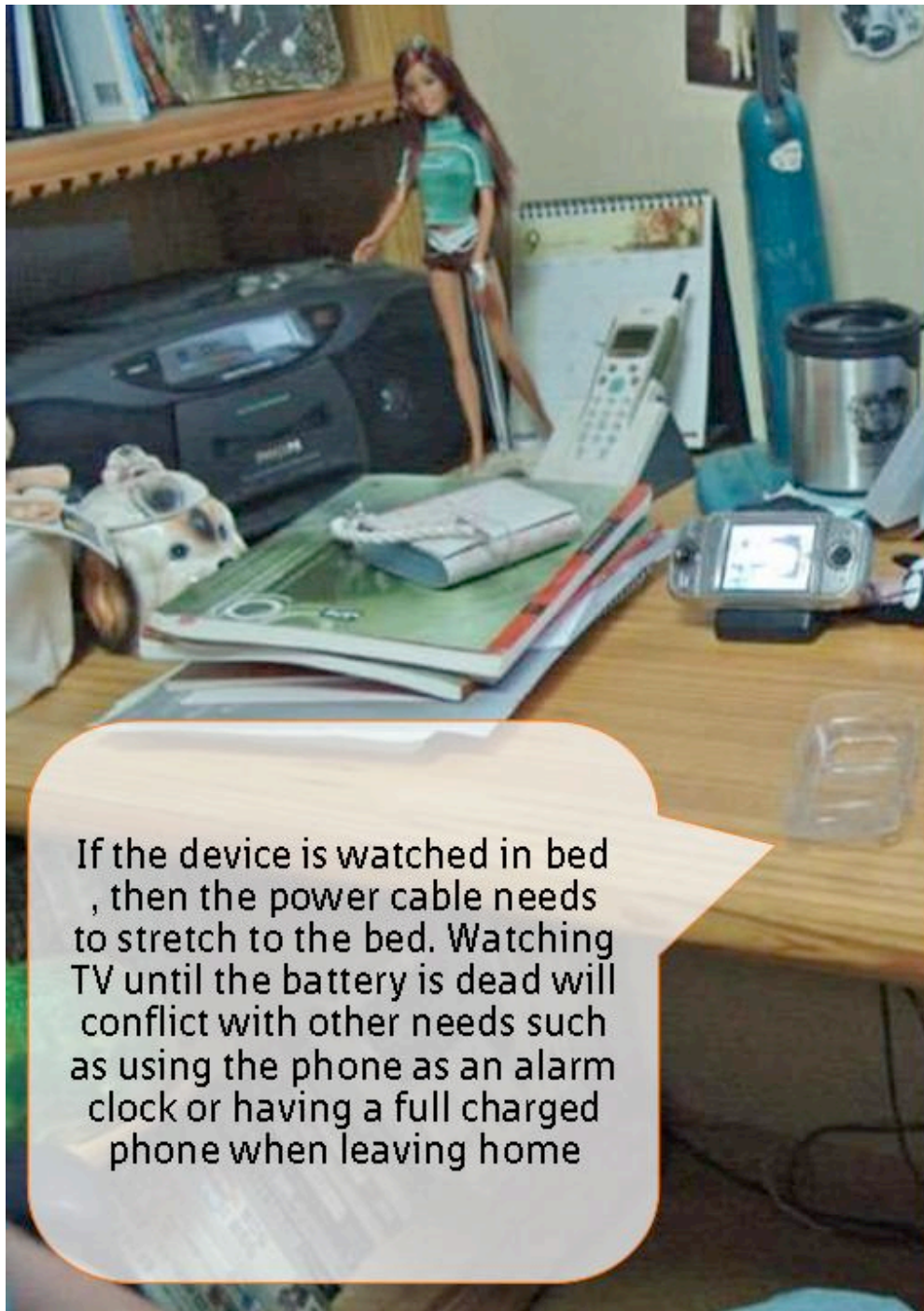




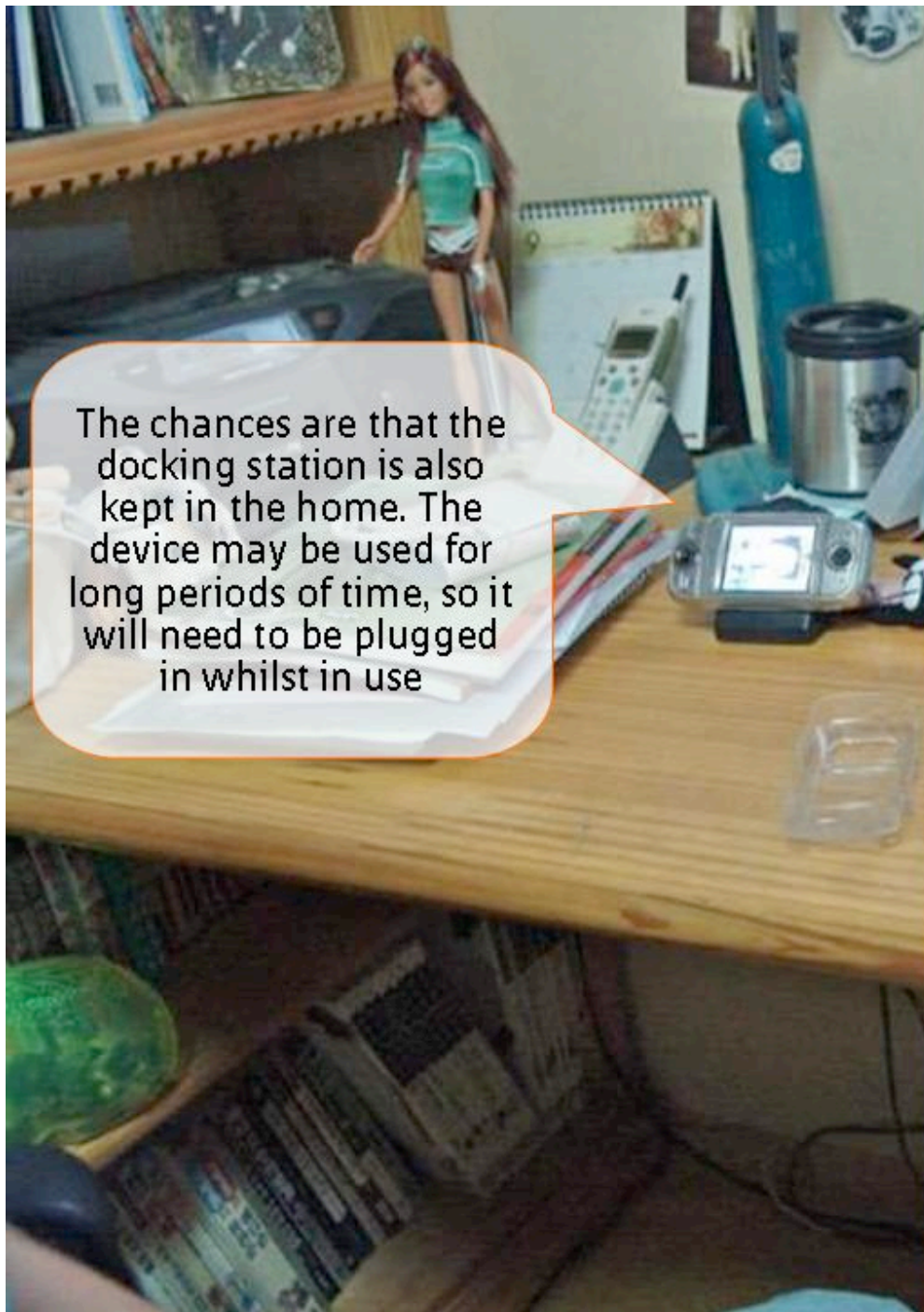
It is possible to  
watch in the home  
without a headset –  
better supporting  
multi-tasking

**NOKIA**







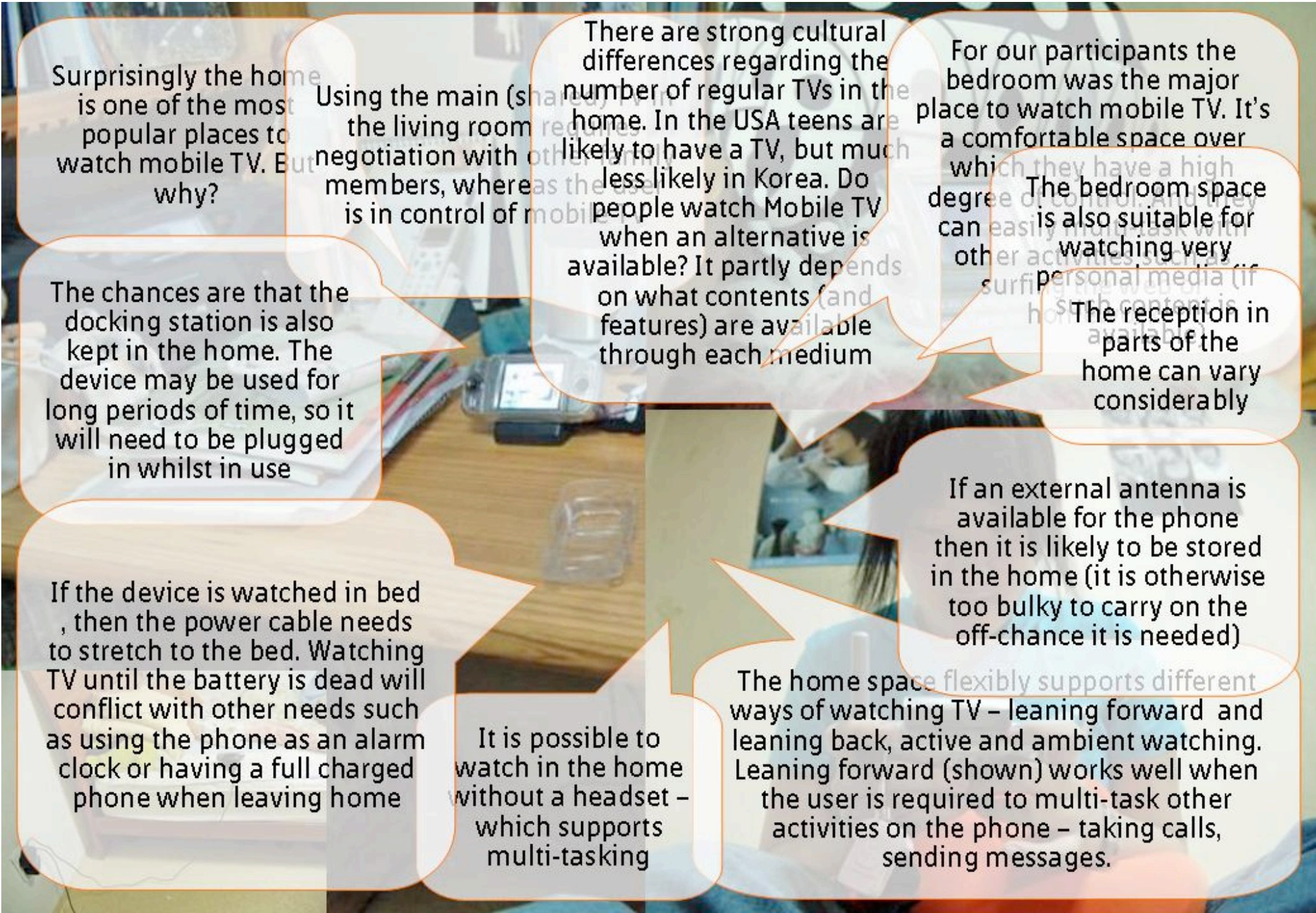


The chances are that the docking station is also kept in the home. The device may be used for long periods of time, so it will need to be plugged in whilst in use



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Surprisingly the home is one of the most popular places to watch mobile TV. But why?

Using the main (shared) TV in the living room requires negotiation with other family members, whereas the user is in control of mobile TV.

There are strong cultural differences regarding the number of regular TVs in the home. In the USA teens are likely to have a TV, but much less likely in Korea. Do people watch Mobile TV when an alternative is available? It partly depends on what contents (and features) are available through each medium

For our participants the bedroom was the major place to watch mobile TV. It's a comfortable space over which they have a high degree of control. And they can easily multi-task with other activities such as surfing the web, or if watching personal media (if such content is available).

The reception in parts of the home can vary considerably

The chances are that the docking station is also kept in the home. The device may be used for long periods of time, so it will need to be plugged in whilst in use

If the device is watched in bed, then the power cable needs to stretch to the bed. Watching TV until the battery is dead will conflict with other needs such as using the phone as an alarm clock or having a full charged phone when leaving home

It is possible to watch in the home without a headset – which supports multi-tasking

If an external antenna is available for the phone then it is likely to be stored in the home (it is otherwise too bulky to carry on the off-chance it is needed)

The home space flexibly supports different ways of watching TV – leaning forward and leaning back, active and ambient watching. Leaning forward (shown) works well when the user is required to multi-task other activities on the phone – taking calls, sending messages.



# Full paper to be published in due course

To include: Drivers for use; barriers to adoption; practices of shared use; device lending; a additional use case (excluded here); immersion vs. distraction; cultural differences; mobile phone as a TV vs. as a communication device; & a discussion on the future of mobile TV.