



Master in Planning and  
Management of Tourism Systems



# IT for Tourism Services

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Nicola Cortesi

# INFORMATION TECHNOLOGY (IT/ICT)

IT is one of the many branches of **computer science**. It is defined as:

“The use of computers\* to create, process, store, retrieve, and exchange all kinds of data”

\* including cell phones, smart TV, ...

# TOURISM & IT

Tourism is one of the fields most affected by IT. In the last century tourism grew mainly thanks to the evolution of the means of transportation and of mass media, and now it thanks to IT as OTA, travel apps, etc.



## INTRODUCTION

Actually no one knows how tourism will change, or how the job market in this sector'll be, or which skills'll be necessary. Forget forecasts!

Universities'll become less important as a center of information and more as a center of formation

# PROJECT WORK

You'll apply your passions and creativity to the world of IT, using social media to kickstart an **online community**



## Dolomites for Beginners

Public group · 89.2K members



<https://tb221.wordpress.com/course-outline/>

# COURSE INFO

## Credits & hours

- 3 credits
- 18 hours of lessons
- 57 hours of individual study
- 2 project works

## Lessons

- Where: Room 6, Via Salvecchio
- When: 9 lessons of two hours each from 12.00 to 14.00.
- There are two intervals, at the beginning and at the end of the lessons: 12.15-13.45
- Bring your laptop with you

## Exam

- The course is an 'idoneità': there are no grades, just 'approved' or not
- In order to be approved, you need to pass a written exam of 20 questions

## WRITTEN EXAM

The written test has a total of **20 closed questions**. Each question has 3 answers, and only one is the right one. In order to be approved, **12 or more** right answers are needed. There are **no grades**: answering correctly to 20 questions is exactly the same as answering to 12. Only knowledge needed is the **definition** of the IT studied in class and the **units of measure** of data storage (GB, TB, PB, etc.)

The written exam is **very simple**, as all your efforts are required for the two **project works** instead, which are not evaluated.

Remember to book the exam in time, and to bring your ID card and a pencil

# COURSE INFO

## Contact

[nicola.cortesi@guest.unibg.it](mailto:nicola.cortesi@guest.unibg.it)



## Weekly meeting with students

Every Tuesday from 15.30 to 16.30, at Room 403 of 4th floor of faculty headquarters, in Piazza Rosate 2. You need to book the room in advance, by sending me an email



## FILE SHARING

Pdf of all lessons are available in the Moodle eLearning shared folder. They are quite extensive in order to be understood also by non-attending students

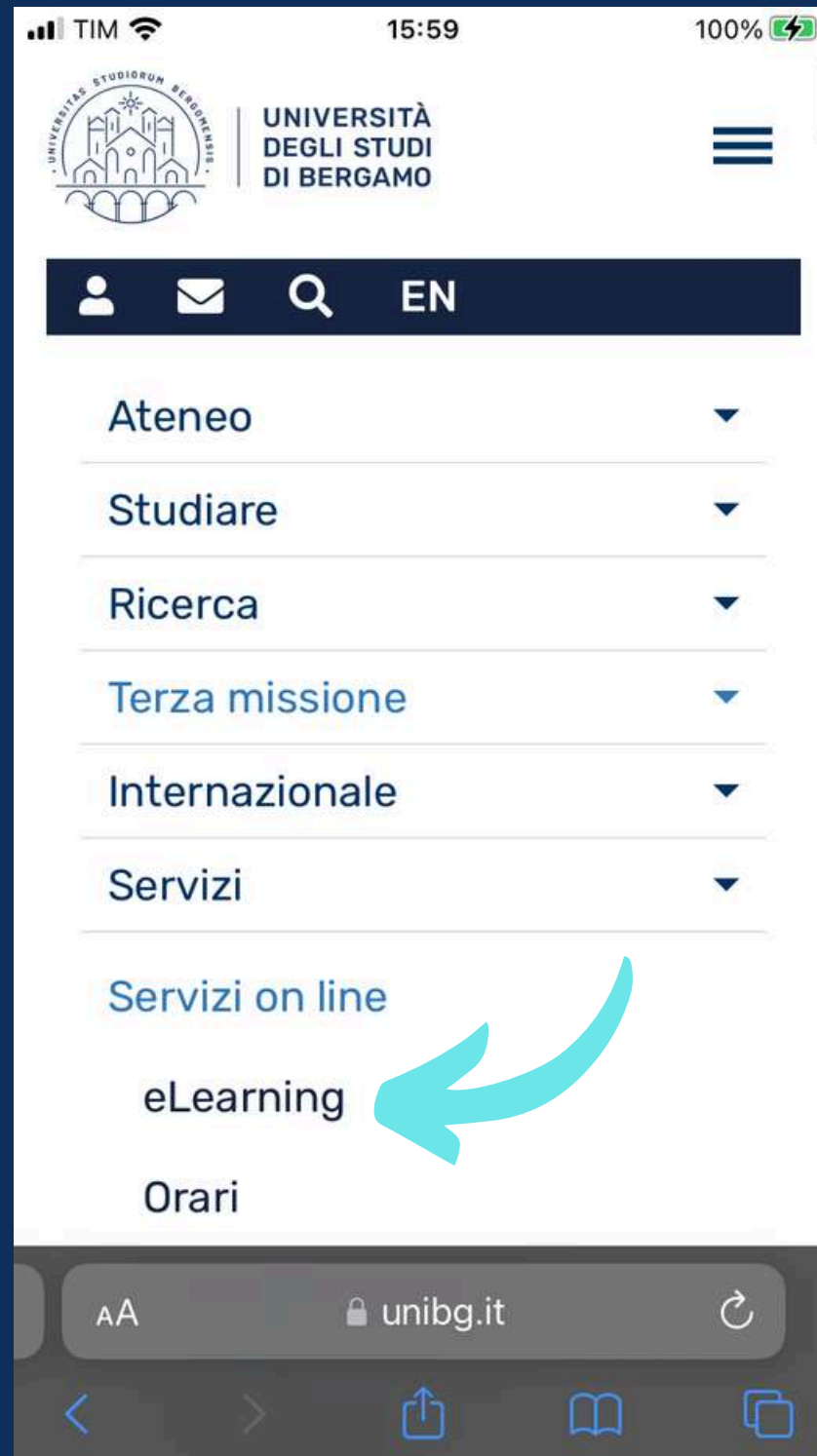
## OTHER COURSE INFO

Available at:

[https://unibg.coursecatalogue.cineca.it/insegnamenti/2024/8938\\_45993\\_18721/2022/8939/268](https://unibg.coursecatalogue.cineca.it/insegnamenti/2024/8938_45993_18721/2022/8939/268)

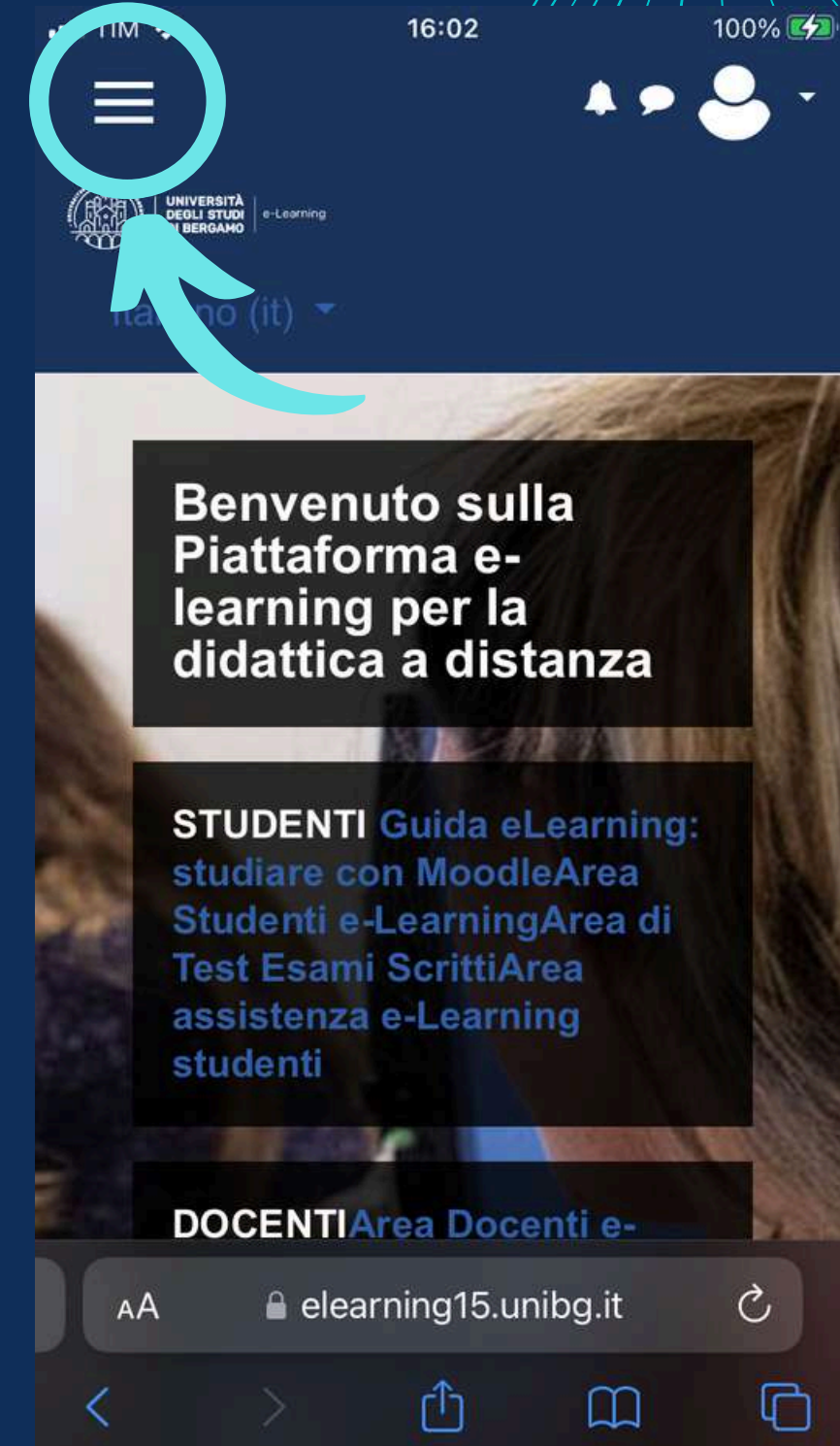
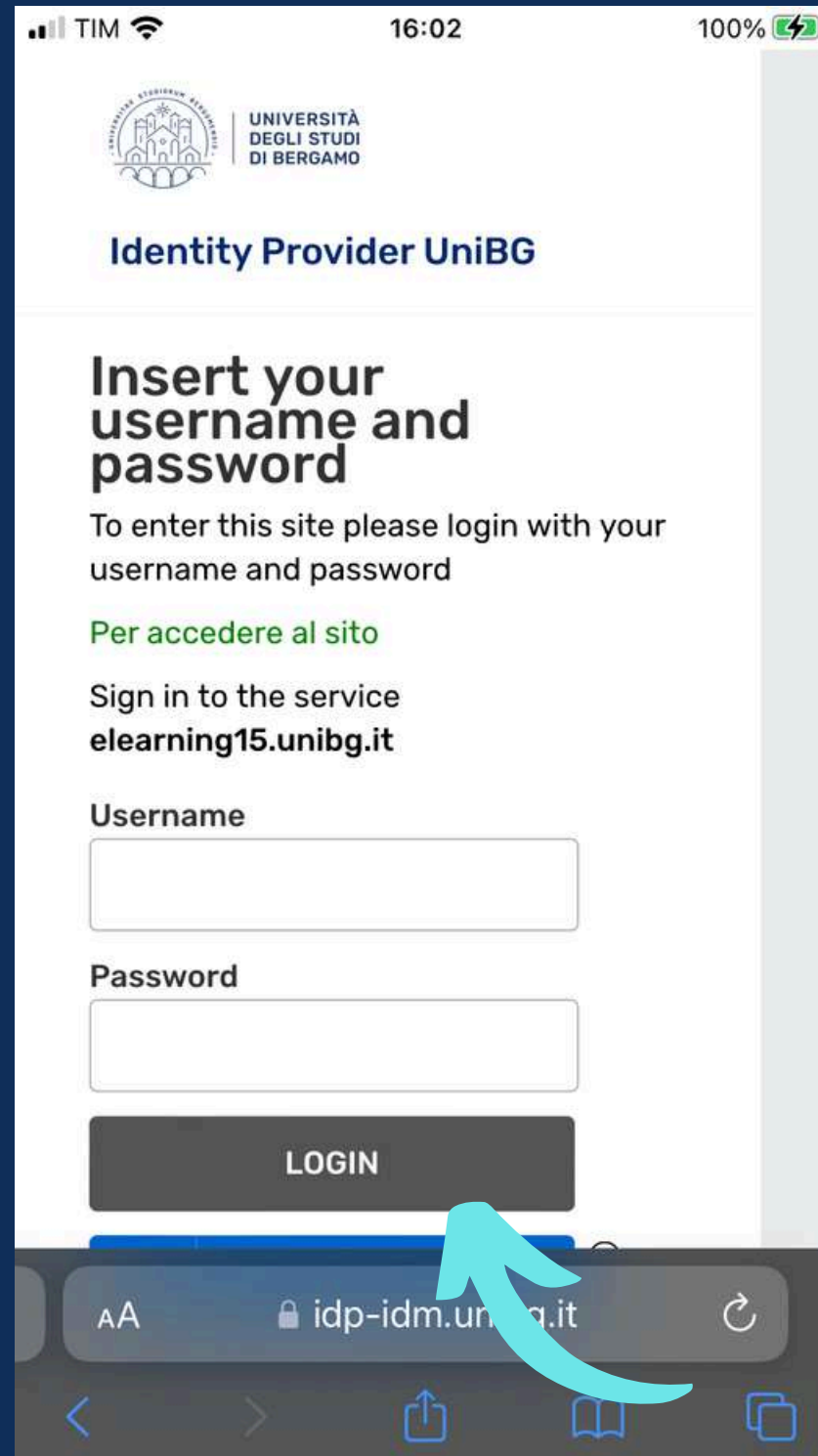
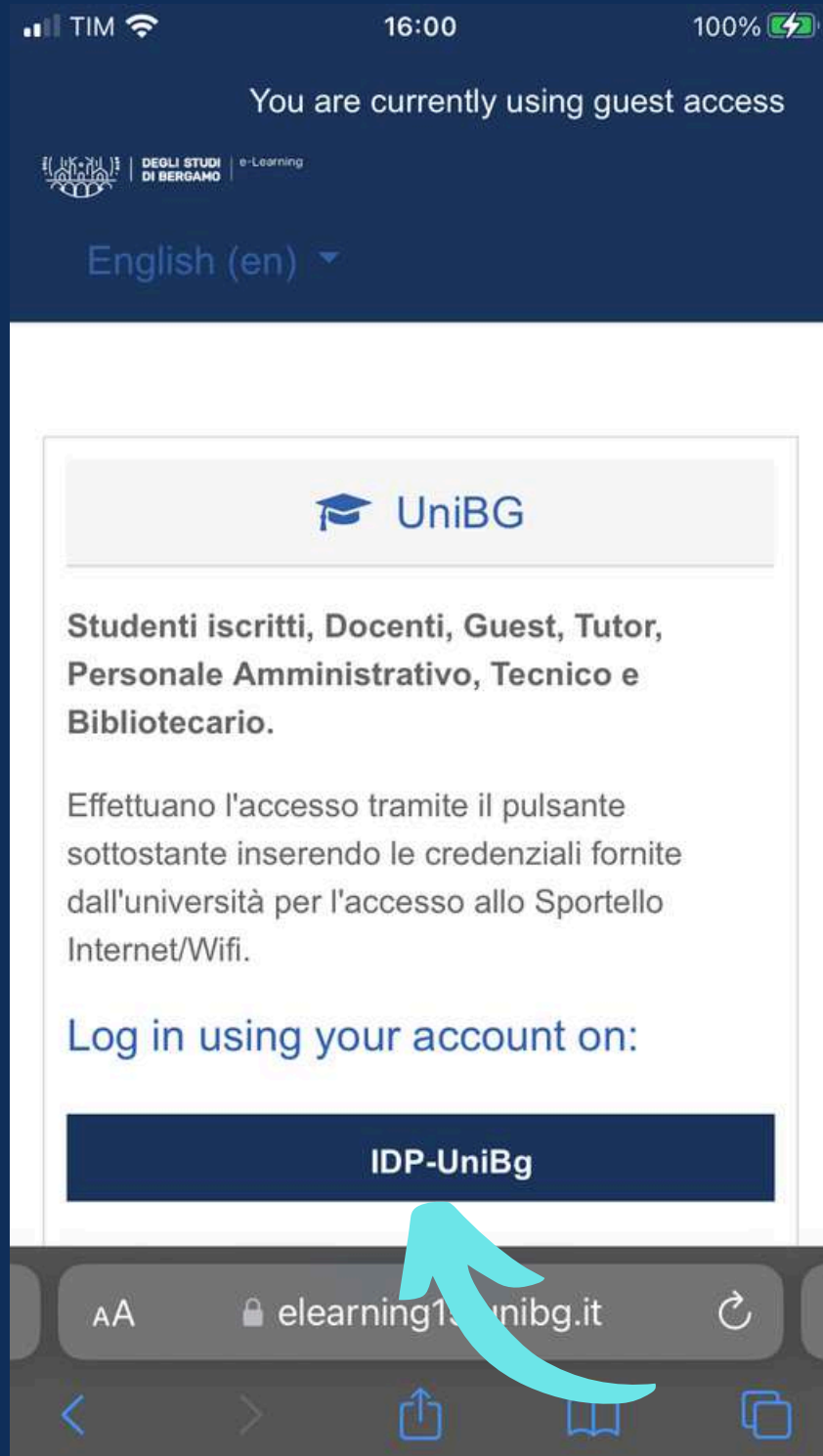


# MOODLE ACCESS FROM SMARTPHONE

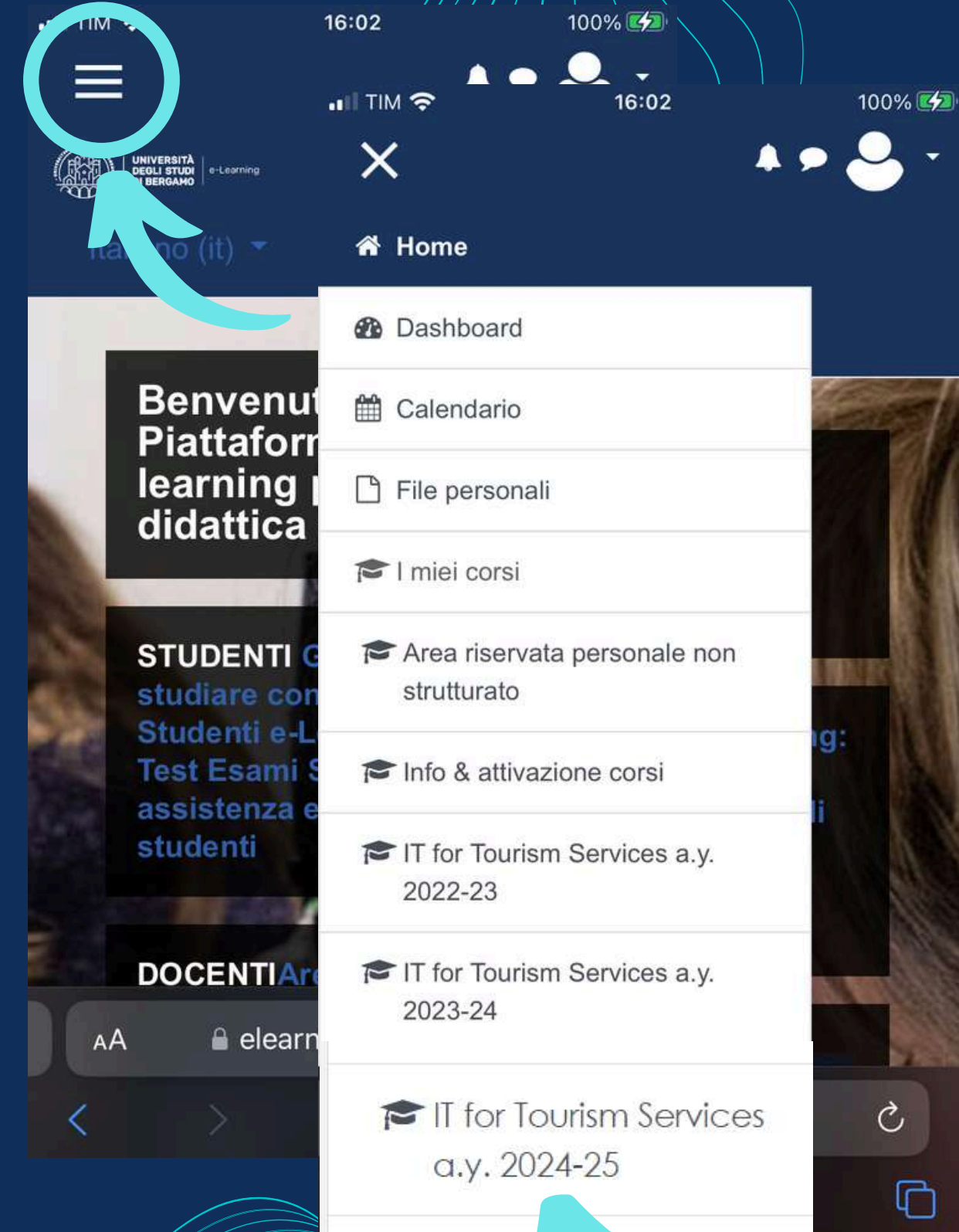
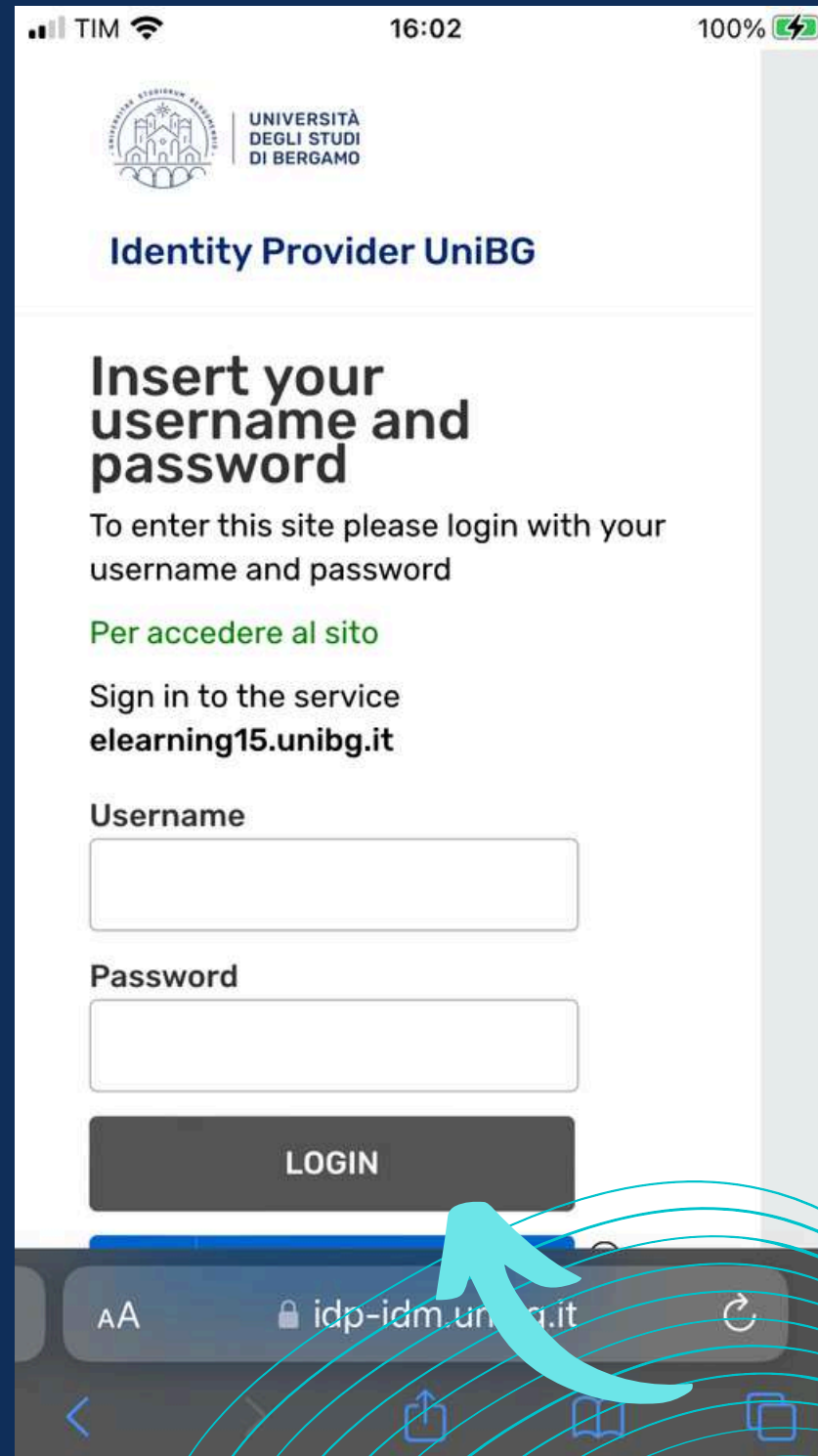
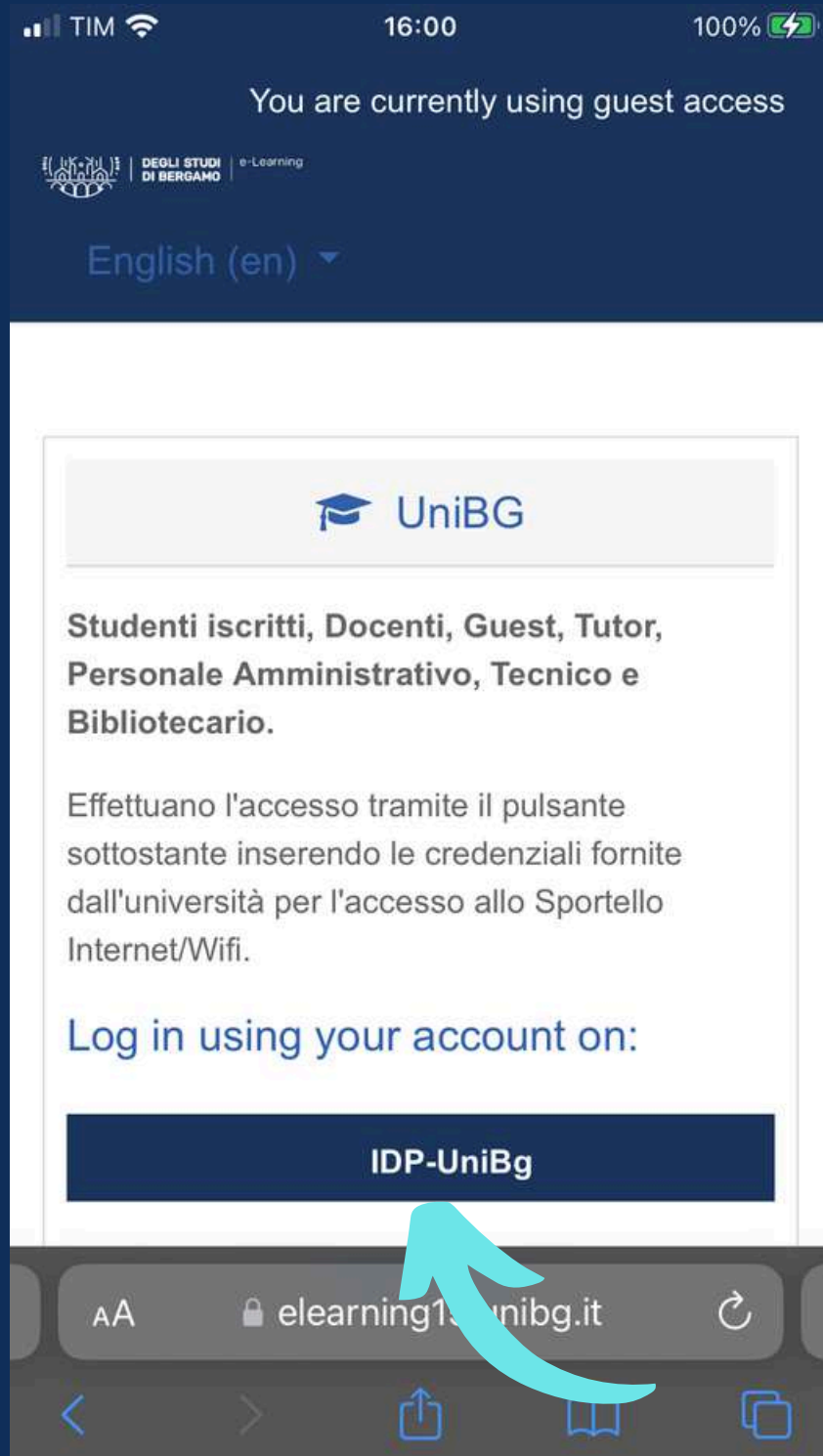


[www.unibg.it](http://www.unibg.it)

# MOODLE ACCESS FROM SMARTPHONE

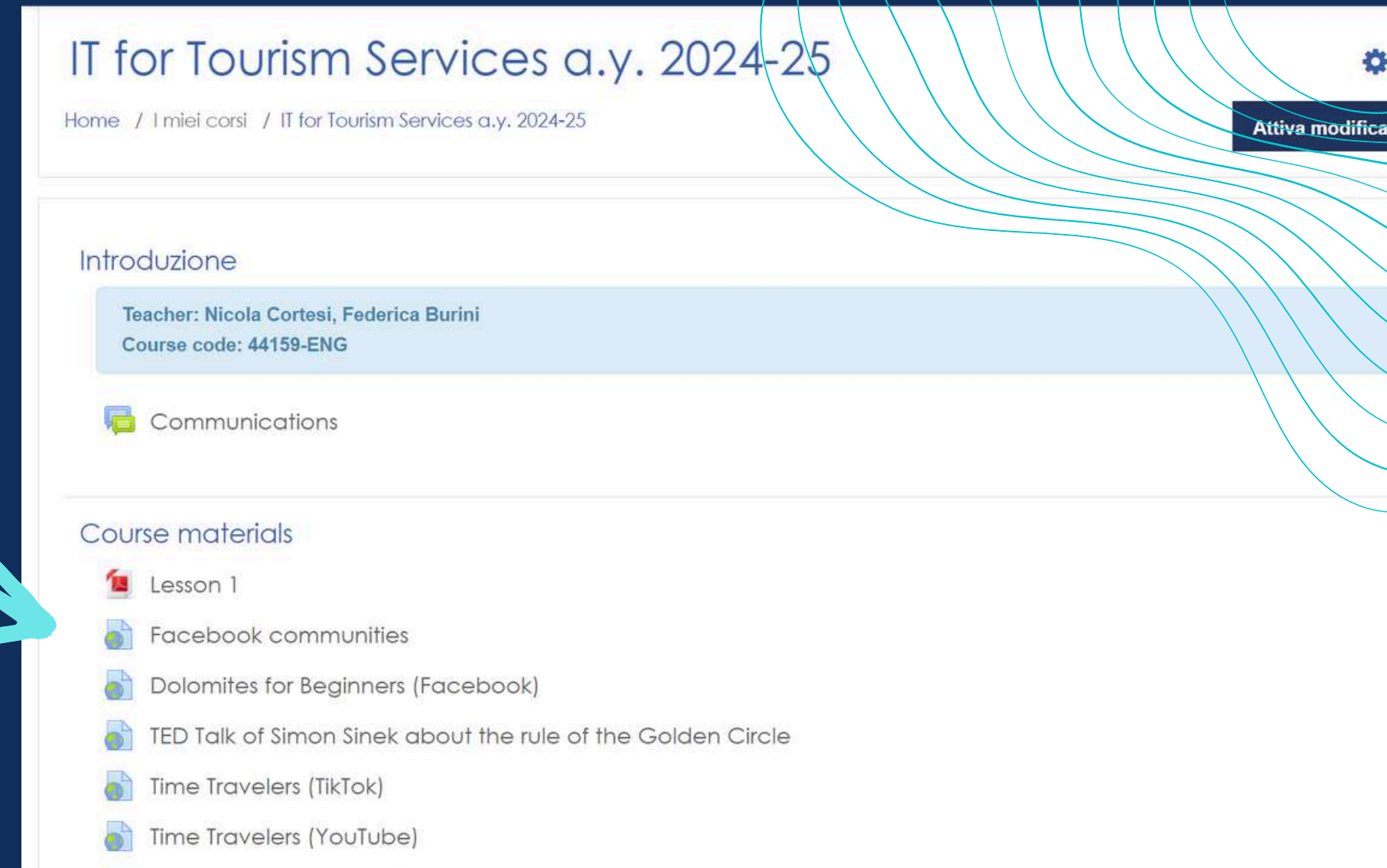


# MOODLE ACCESS FROM SMARTPHONE



# MOODLE

- Pdf with the lessons
- Under "Facebook communities" there is the list of the fb groups that you are going to kickstart



IT for Tourism Services a.y. 2024-25

Home / I miei corsi / IT for Tourism Services a.y. 2024-25

Attiva modifica

Introduzione

Teacher: Nicola Cortesi, Federica Burini  
Course code: 44159-ENG

Communications

Course materials












- Lesson 1
- Facebook communities
- Dolomites for Beginners (Facebook)
- TED Talk of Simon Sinek about the rule of the Golden Circle
- Time Travelers (TikTok)
- Time Travelers (YouTube)

# MOODLE

- At the bottom, there is a section called "Other materials", with articles and videos to delve deeper into the topics covered in class



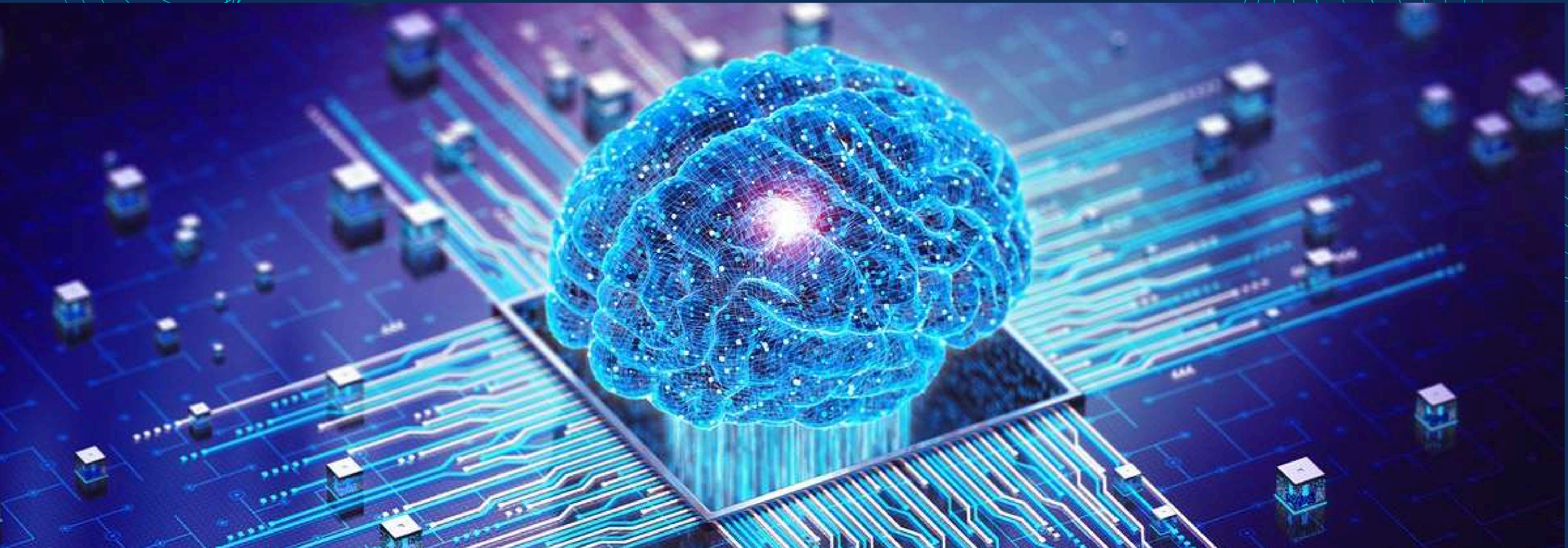
## Other materials

-  Community Canvas Guidebook
-  Google form on the virtual tour of Minturno
-  Article: Impact of AI in Travel, Tourism and Hospitality (Bulchand)
-  Article: The Use of Big Data in Tourism (Belias et al. 2021)
-  Article: Bitcoin a peer-to-peer Electronic Cash System (Nakama)
-  Article: The Impact of Blockchain Technology Adoption on Tour
-  Article: An enabling Framework for Blockchain in Tourism (Balas)
-  Article: Convergence of IOT in Tourism Industry: a Pragmatic An
-  Article: Linked Open Data Search Engine (Azar et al. 2016)
-  TED Talk of Simon Sinek about the Golden Circle
-  TED Talk of Tim Berners-Lee on the Semantic Web

# COURSE STRUCTURE

- 1 Building an online community on tourism
- 2 Develop the skill of reinventing yourself and apply AI to social media
- 3 Discover the impact of IT on tourism

# IMPACTS OF IT ON TOURISM





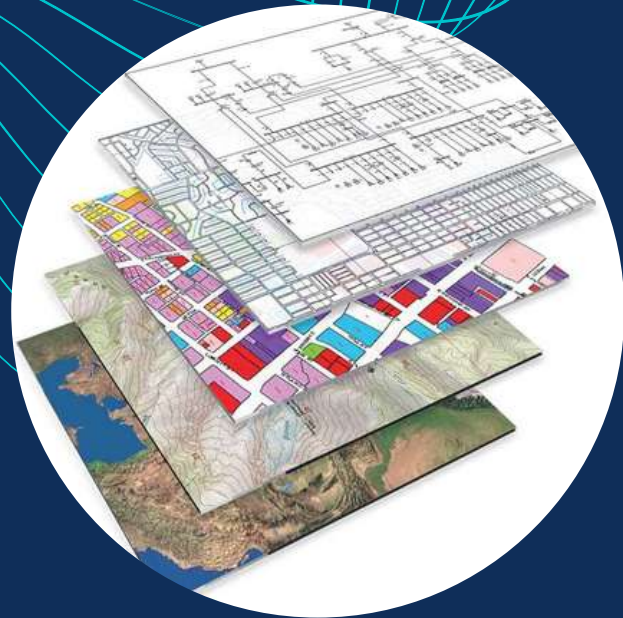
# MAIN IT WITH AN IMPACT ON TOURISM

- Social Media\*\*
- Online travel agencies (OTA)\*
- Mobile Tourism (e.g: digital maps)
- Artificial Intelligence (AI)\*\*
- LLM (e.g: ChatGPT)
- Global Positioning System (GPS)
- Workation
- Big Data
- Smart Tourism
- Smart Destinations\*
- Smart Hotels\*
- Virtual Reality
- Augmented Reality
- Neverending Tourism\*
- E-Tourism\*
- E-Government
- Beacons
- Web 1.0, 2.0 and 3.0
- Internet of Things
- Self-driving vehicles
- Metaverse
- Blockchain (e.g: bitcoins, NFT)
- Totems / Digital kiosks
- Artwork Digitalisation

\*IT developed explicitly for tourism. All others are transversal to tourism

\*\* also in the 2nd semester module "Tourism Management" of prof. Roberta Garibaldi and Angel Herrero

# Main applications of IT to Tourism Services (1/5)



## GIS

Geographic Information Systems (GIS) are software for capturing, storing, checking, and displaying geographic data. They generate every kind of map imaginable, and may link them with tracking systems as GPS. Very useful for destination management.

Module: Geotracking and webmapping for Tourism (2nd year) - Prof. Burini and Mathis Stock



## Social Media (SM)

People share with a vast audience the most significant memories from their travels: a more powerful way of attracting tourists than simple advertisements. People build their trust in a tourism agency based on the reviews of the others

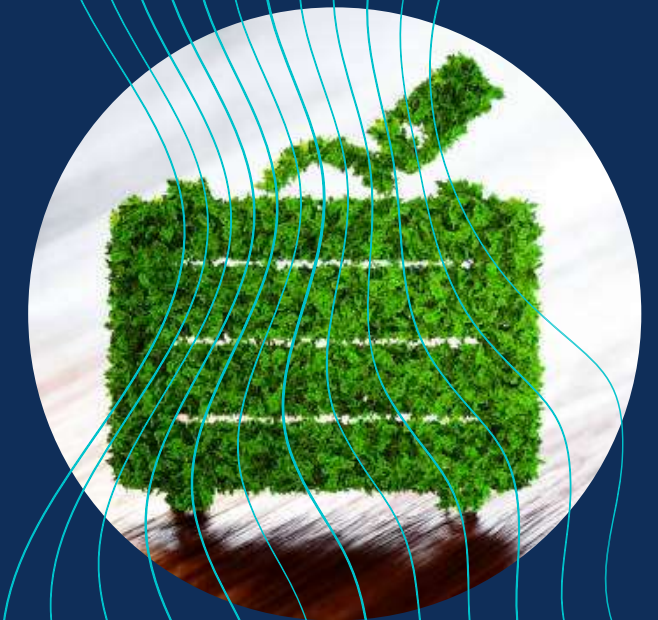
Module: IT for Tourism Services (this one)



## SM Marketing

Social Media Marketing analyses all the data from social media (e.g: Facebook, LinkedIn, YouTube, Twitter) to develop very efficient market strategies, able to identify very clear targets and to create data-driven market campaigns

Module: Tourism and Social Media Marketing (2nd semester of 1st year) - Prof. Roberta Garibaldi and Angel Herrero



## Sustainable Tourism

IT can be used to accelerate the Green Transition, enhancing destination sustainability. IT can also educate tourists and assist them in making more sustainable choices

Module: Environmental and Sustainable Tourism (1st year, 1st semester) - Prof. Holden Andrew and Menga Filippo

# Main applications of IT to Tourism Services (2/5)



## Artwork Digitalization

It enables people to overcome spatial, temporal and economical barriers, improving the access to culture and making it more democratic and more inclusive. Digital systems manage online tickets, flexible pricing, etc

Module: Art and Museum Resources (1st year) - Prof. Gemma Tully and Raffaella Pulejo



## Overtourism Management

Although social media already encourage a focus on a small number of over-visited destinations, smart IT solutions can offer an exit strategy to overtourism

Module: Information and Communication for Sustainable Turism (2nd year, 1st semester) - Prof. Marta Pantalone and Marta Soligo



## Artificial Intelligence

Employed to find patterns in large streams of unstructured information automatically. E.g: travel companies identify long-term forecasts based on observed trends and patterns, detecting which destinations and trips will be the most popular next season.

Module: IT for Tourism Services (this one)



## AR & VR

Augmented Reality (AR) and Virtual Reality (VR) enhance the physical environment for visitors at a certain location, prepare travelers for what they should expect, give guests a new level of comfort and confidence in making travel plans, and engage them in a variety of experiences

Module: IT for Tourism Services (this one)

# Main applications of IT to Tourism Services (3/5)



## Smart Destinations

IT can help collect touristic information on a destination in order to improve the quality of its touristic offer.

Module: IT for Tourism Services (this one)



## Workation

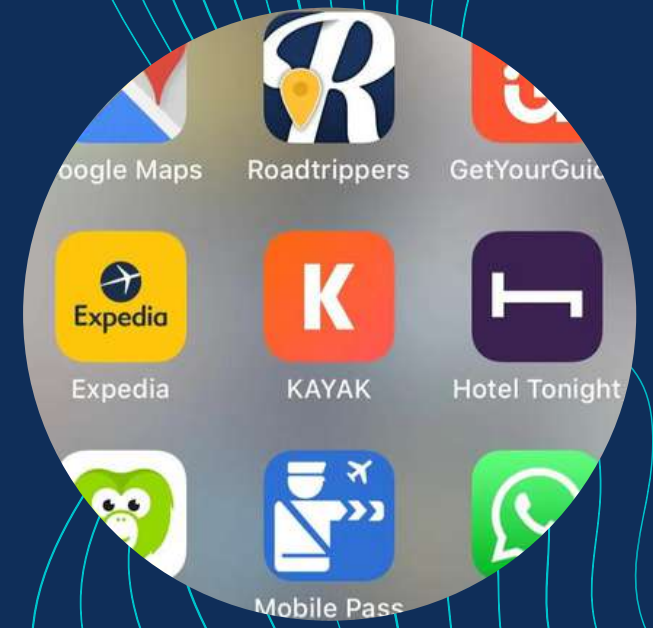
Widespread adoption of smart working in 2020 made it possible for the first time in history to spend all or part of the year working everywhere, so people can work and travel at the same time (hence the word "Workation", form the union of "Work" and "Vacation")

Module: IT for Tourism Services (this one)



## E-commerce

The possibility to buy online also affected tourism industry, creating the online travel agency (OTA) that sell their products fully online



## Travel Apps

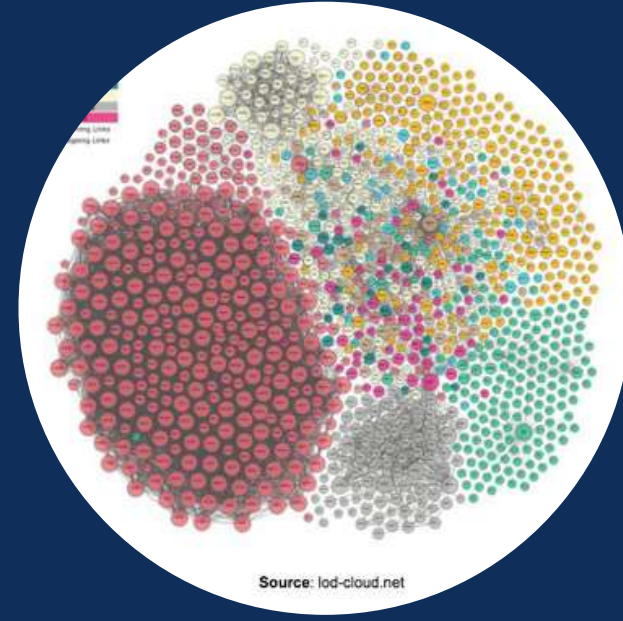
A whole ecosystems of apps for mobile devices exist to satisfy every traveler need: from tracking flight delays, finding last-minute accommodations or finding the closest wifi spot, and even locating the nearest public restroom

# Main applications of IT to Tourism Services (4/5)



## Blockchain

Disrupting technology that makes central intermediaries superfluous by transferring their functions to all participants of a given system. It may resize the role of online travel agencies, enabling greater customer-to-customer transactions to emerge in travel



## Linked Open Data

Also called "Semantic Web". Connecting databases together is much more powerful than linking web sites or documents. Many databases are already online but still private, or they are not connected to each other. This limit the usefulness of web searches. E.g: in this way tourists may better search for the top destinations in a target city



## Internet of Things

Physical objects with sensors, processors and/or software that connect and exchange data with other devices and systems over the Internet or other networks. They deliver a superior customer experience, decrease energy consumption and optimise internal processes. Examples: smart homes, smart hotels, smart parkings



## Self-driving Cars

People'd travel more if they could drive less. Autonomous cars will also make possible travels where two cars are usually needed. Finding a parking place'll become a lot easier, as your car will just leave you off and go to park itself. Also traffic congestions and pollution'd decrease

# Main applications of IT to Tourism Services (5/5)



OTA (Online travel ag.)



Web pages & HTML



Web 2.0 & CMS



Spreadsheets



Cybersecurity, PEC

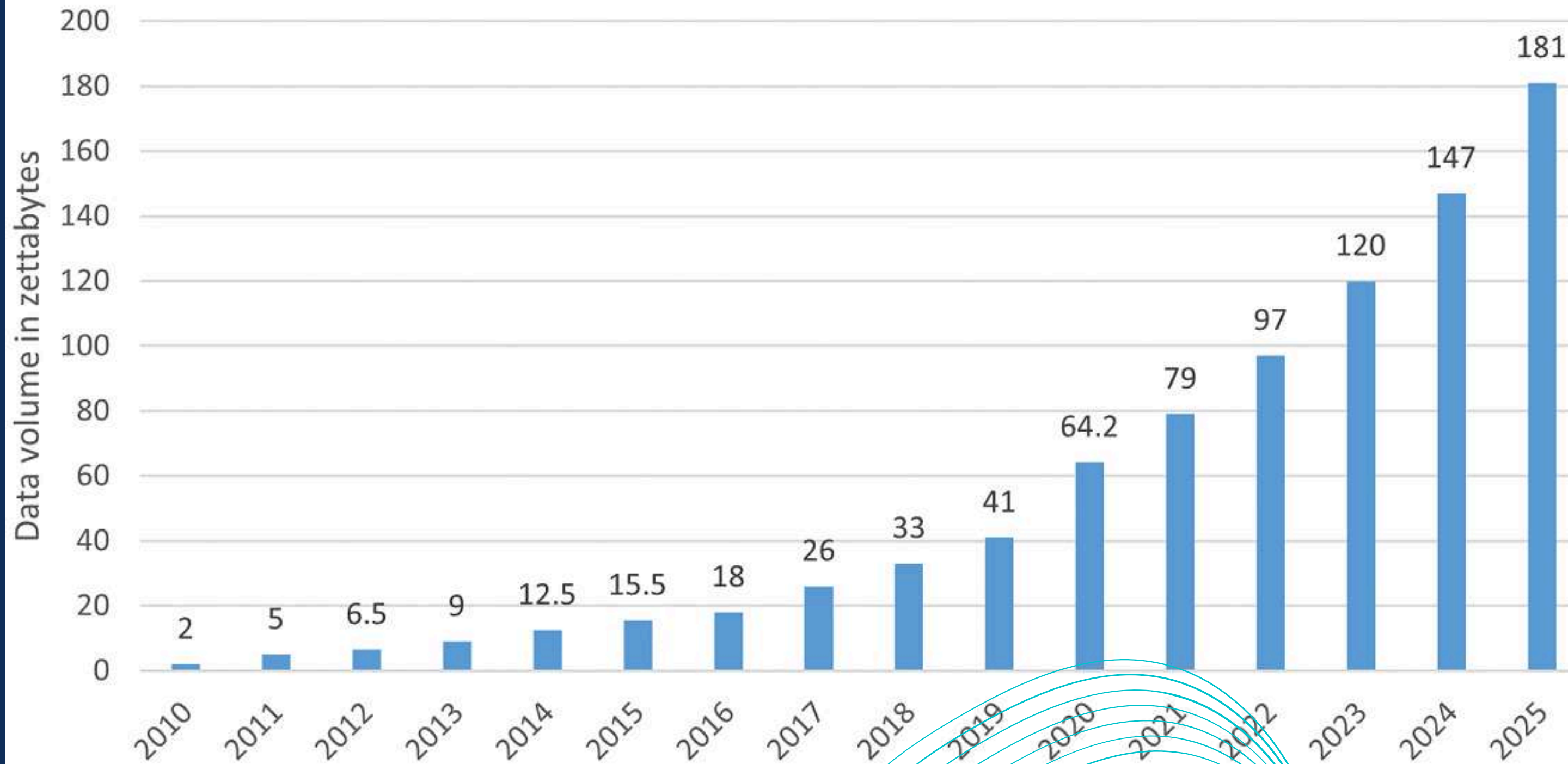


Databases & SQL

# DATA

Nowadays, 90% of data stored were generated in the last two years

## Volume of data created and replicated worldwide (source: IDC)



## DATA

In 2023, data generated surpassed 100 Zettabytes (1 ZB =  $10^{21}$ ): a million of a million of a billion of bytes



## DATA

$10^3$ : Kilobyte (kB)

$10^6$ : Megabyte (MB)

$10^9$ : Gigabyte (GB)

$10^{12}$ : Terabyte (TB)

$10^{15}$ : Petabyte (PB)

$10^{18}$ : Exabyte (EB)

$10^{21}$ : Zettabyte (ZB)

$10^{24}$ : Yottabyte (YB)

1 byte = 8 bits

1 Mbps = 1 MB per second

# PROJECT WORK: ONLINE TRAVEL COMMUNITY



# SOCIAL MEDIA

JUL  
2022

## ESSENTIAL DIGITAL HEADLINES

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES

GLOBAL OVERVIEW

TOTAL  
POPULATION



we  
are  
social

**7.98**  
BILLION

URBANISATION

**57.0%**

UNIQUE MOBILE  
PHONE USERS



oo

**5.34**  
BILLION

vs. POPULATION

**66.9%**

INTERNET  
USERS



KEPHOS

**5.03**  
BILLION

vs. POPULATION

**63.1%**

ACTIVE SOCIAL  
MEDIA USERS



**4.70**  
BILLION

vs. POPULATION

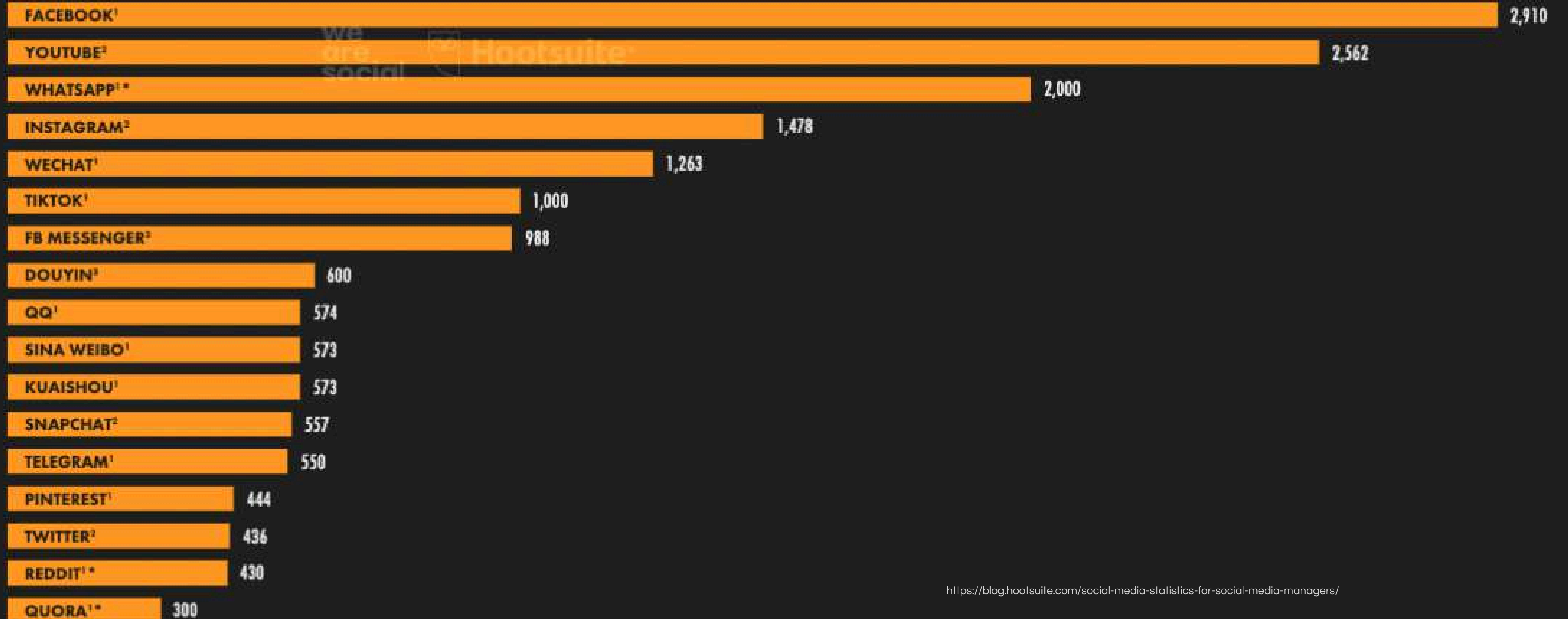
**59.0%**

# SOCIAL MEDIA

JAN  
2022

## THE WORLD'S MOST-USED SOCIAL PLATFORMS

RANKING OF SOCIAL MEDIA PLATFORMS BY GLOBAL ACTIVE USER FIGURES (IN MILLIONS)



# SOCIAL MEDIA

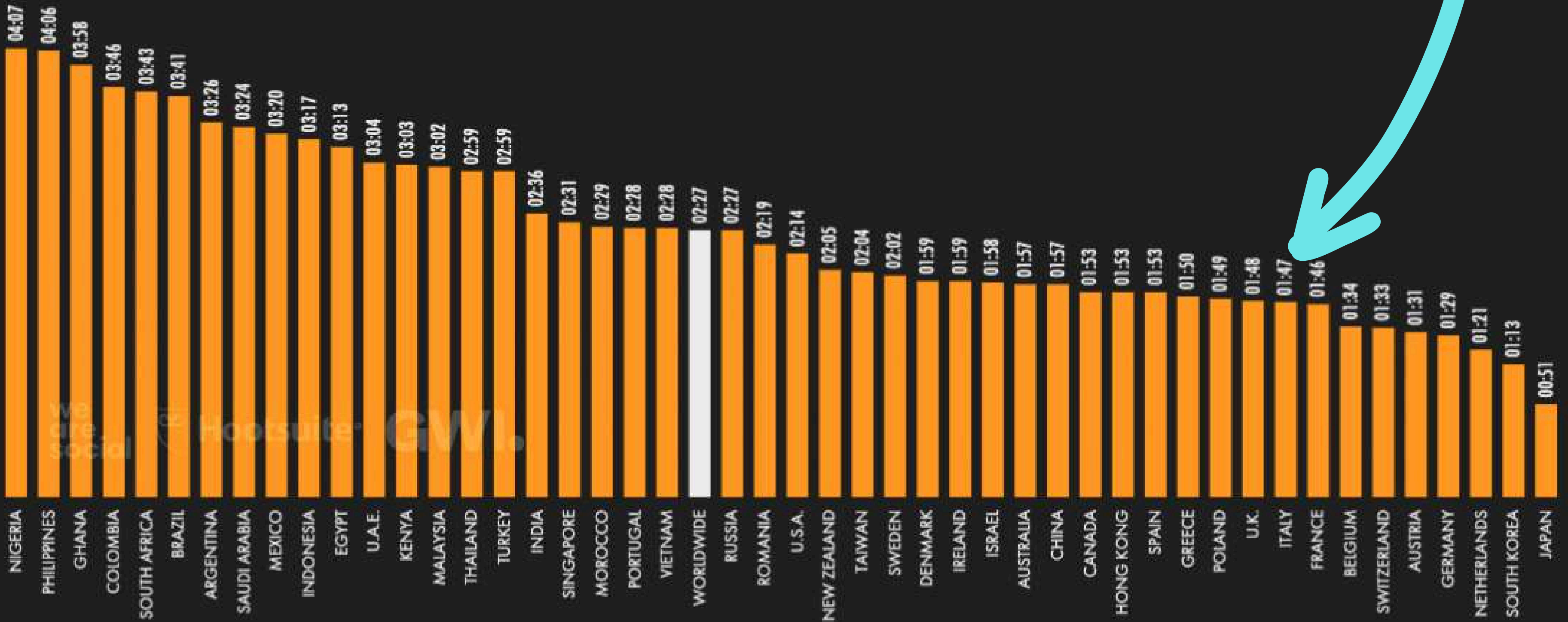
**JAN  
2022**

## DAILY TIME SPENT USING SOCIAL MEDIA

AVERAGE AMOUNT OF TIME (IN HOURS AND MINUTES) THAT INTERNET USERS AGED 16 TO 64 SPEND USING SOCIAL MEDIA EACH DAY

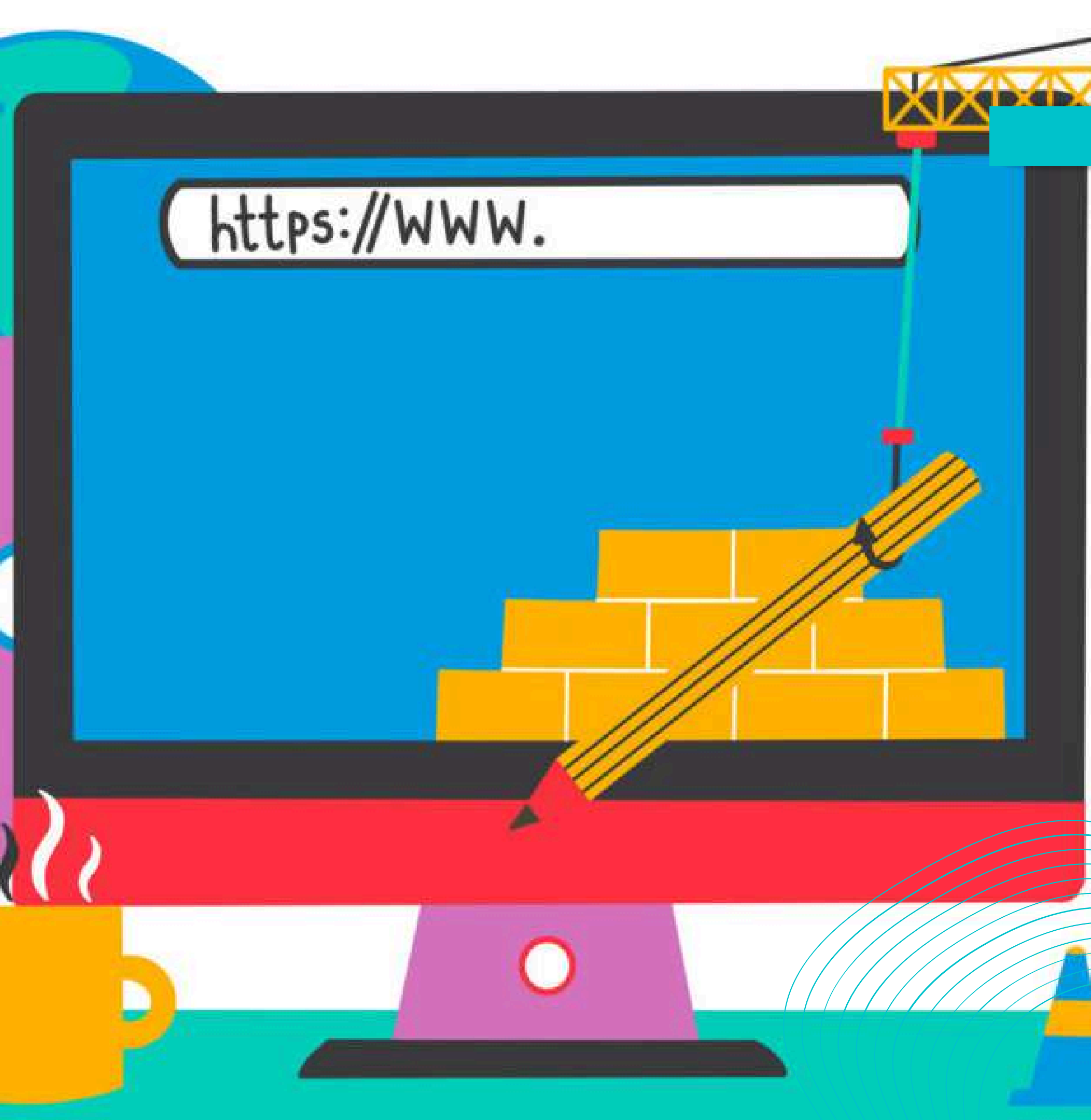
<https://blog.hootsuite.com/social-media-statistics-for-social-media-managers/>

GLOBAL OVERVIEW



## BUSINESS TRICK

A common mistake to avoid is spending much time and money on creating the web site and paying for the advertising to attract customers. This strategy has no guarantee of success



## COMMUNITIES

How? One of the best strategies is by opening an online community. You first open it and make it grow, and if it succeeds, than you create your business around it

## COMMUNITIES

Online communities are like bars where you and your potential customers meet to take a coffee together

Fb groups have a huge base of almost 3 billions people globally of all ages (35 millions only in Italy)



## FACEBOOK GROUPS

Communities don't give any immediate economical benefit. Nonetheless, they are even more important than money, for several reasons



## ADVANTAGES

You create gratitude in your members by solving their problems or helping them. In this way, not only they'll trust you, but they'll also always speak well of your community/brand to everyone: the word of mouth is a powerful tool

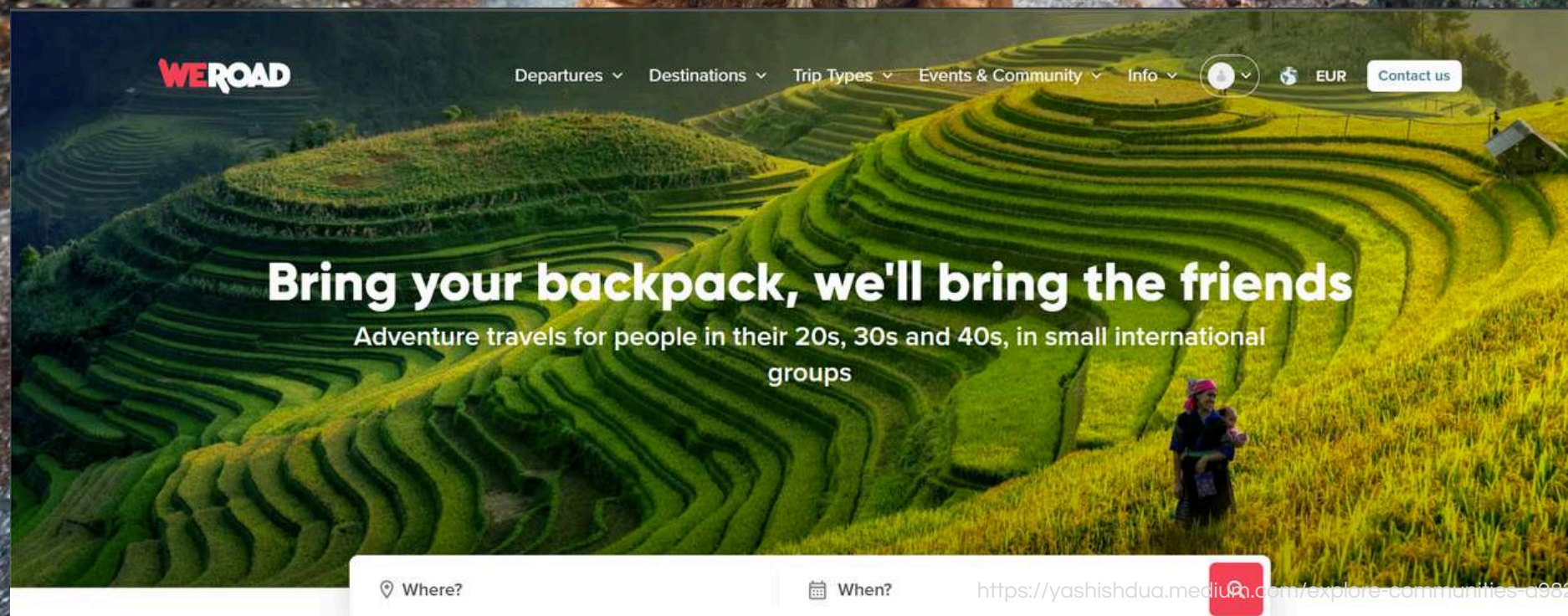
## ADVANTAGES

A community is the best way to acquire **loyal clients** that follow you not because of your products but because they are **fond of you**

## ADVANTAGES

People usually don't buy a travel when they first see its advertisement.

They may buy it if they are also part of a community that they trust and that proposes them that travel



**WEROAD** Departures ▾ Destinations ▾ Trip Types ▾ Events & Community ▾ Info ▾ EUR Contact us

**Bring your backpack, we'll bring the friends**  
Adventure travels for people in their 20s, 30s and 40s, in small international groups

Where? When? <https://yashishdua.medium.com/explore-communities-000203020606>

## ADVANTAGES

You'll build a network of contacts with like-minded people who will recognize you as an expert on that topic. Real experts will treat you as if you were on their same level. In real life, contacts can be more important than CV

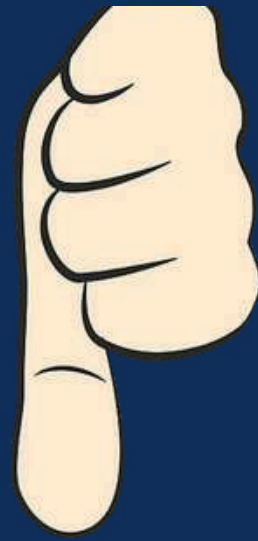


## ADVANTAGES

Brands, journals, universities, even influencers may invite you to meetings, webinars, seminars, events, conferences and soon or later someone will also make you a good job offer

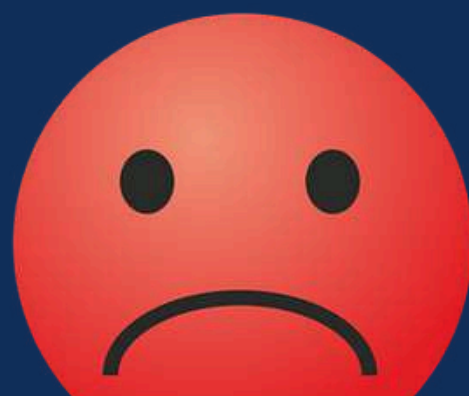
## ADVANTAGES

You'll also collect a lot of data and email addresses of potential clients that you'll be able to use to your advantage if you open your own brand in the tourism sector



## ADVANTAGES

You'll get many useful feedbacks from your members any time you develop a new product/service/web page, helping you validate its market potential and give you a clearer idea





## COMMUNITIES

Money comes indirectly in the form of collaborations, ads, jobs, events, books, formation, ...





## ADVANTAGES

The only business model that works nowadays is that of **selling through communities**. This is especially true in the tourism sector!



## ADVANTAGES

Many online travel portals and agencies (OTA) and web sites are just empty boxes because there is no community behind them to sustain and support them



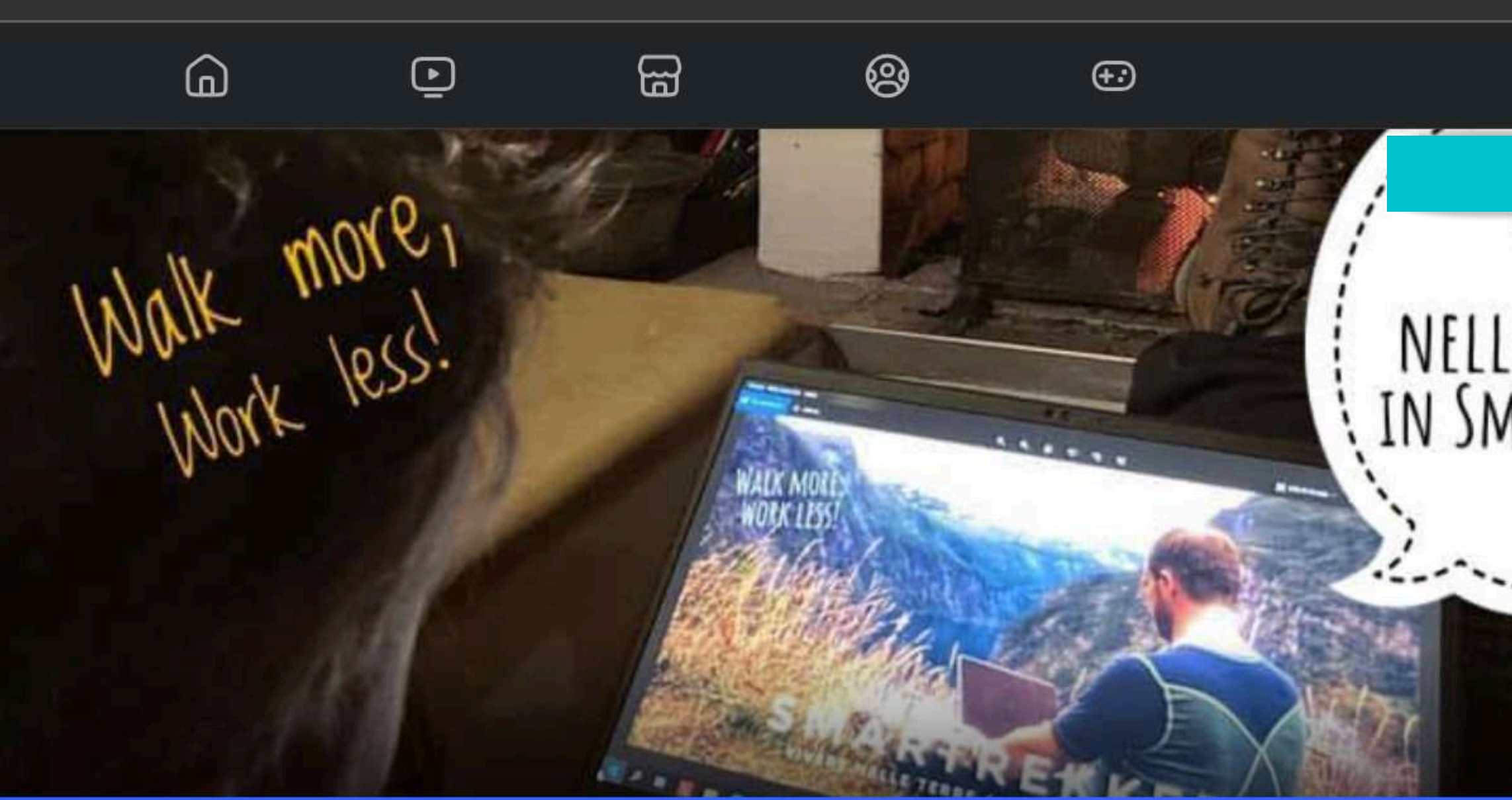
## ADVANTAGES

That's an important example of how technology alone is useless without a previous work of aggregation of people



# EXAMPLES

The Facebook group "Smart Trekkers" aims at helping smart workers finding the best places to work in the Alps



NELLE  
IN SM

Group by Smart Trekkers

## Smart Trekkers

Public group · 4.0K members

Discussion Featured Events Media Files People

Write something... <https://www.smartgreenpost.it/2020/09/28/il-cammino-e-donna-ilaria-canali-racconta-le-sue-ragazze-in-gamba/>

About

1 Smarttrekkers: come nasce

## EXAMPLES

The Facebook group "Ragazze in gamba" ("Smart girls") is a group of Italian women who love hiking. It was born 4 years ago and in a few months it grew to 85'000+ members.

# Ilaria Canali





# ONLINE COMMUN.

In this group members post anything funny that happened to them while in the mountains



Group by Gente che va in montagna una volta l'anno e si sente Messner

## Gente che va in Montagna 2 volte l'anno

Public group · 38.7K members

People who go to the mountains twice a year



# COMMUNITIES

You do not **CREATE** a  
successful community.  
You **FIND** it!





## IDEAL COMMUNITIES

The topic of the community and the group name are the two **most important choices** to do and that determine its **potential success**

## VERTICAL COMMUNITIES

Avoid horizontal communities which are not focused on a single topic. Consider only vertical communities, focused on a very specific topic

## VERTICAL COMMUNITIES

Check that your community is original and there are no similar groups already in facebook on that topic. You don't want any competitor already ahead of you!

## COMMUNITIES

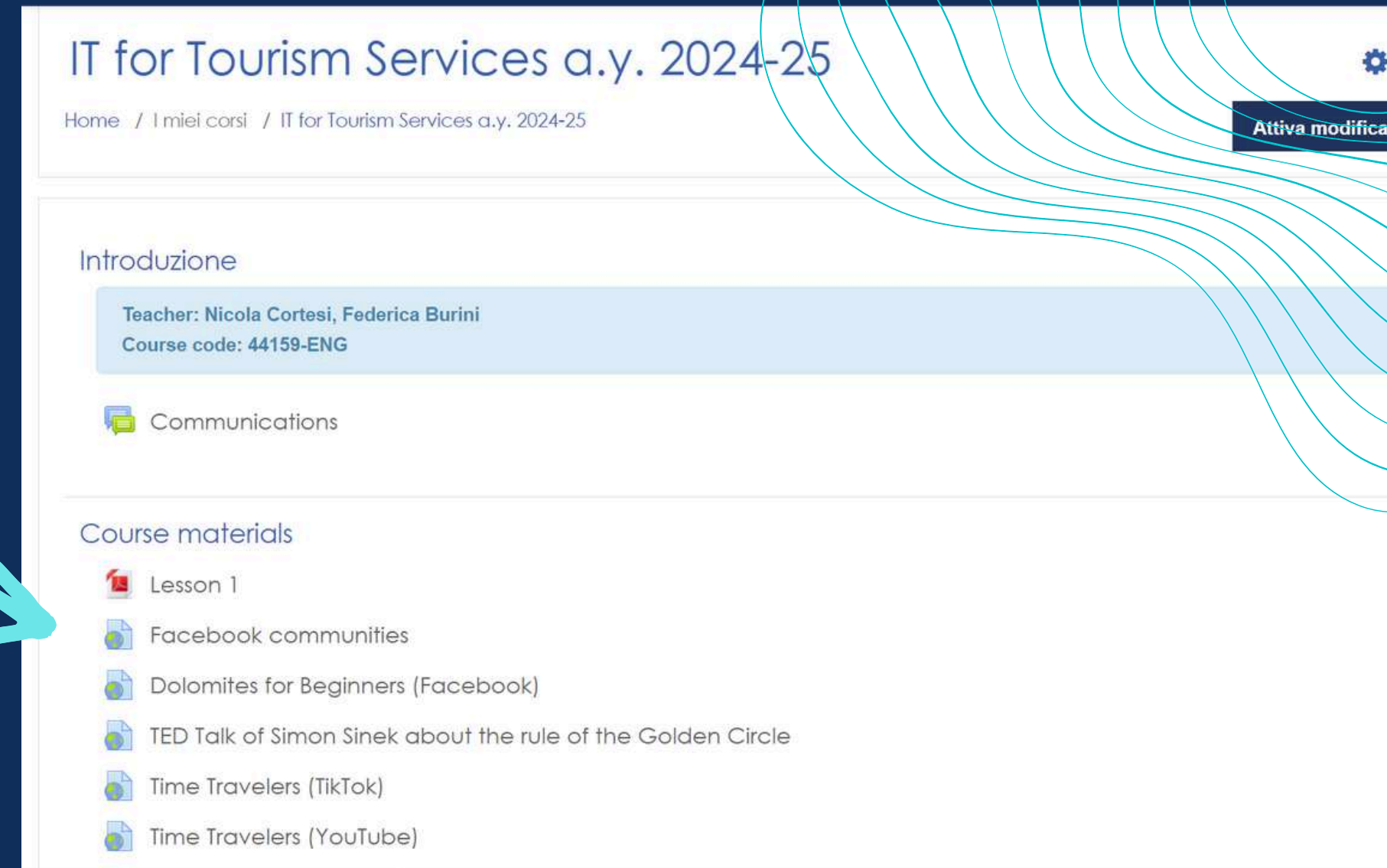
Choose the same language of the public you want to target: "Dolomiti per Principianti" is aimed at italians, while "Dolomites for Beginners" to all people who does not speak italian. It is strongly recommended to use English

## COMMUNITIES

The name of the community must **show up** in **search results** and it should also easily tell what your group is about

# MOODLE

- Pdf with the lessons
- Under "Facebook communities" there is the list of the fb groups that you are going to kickstart



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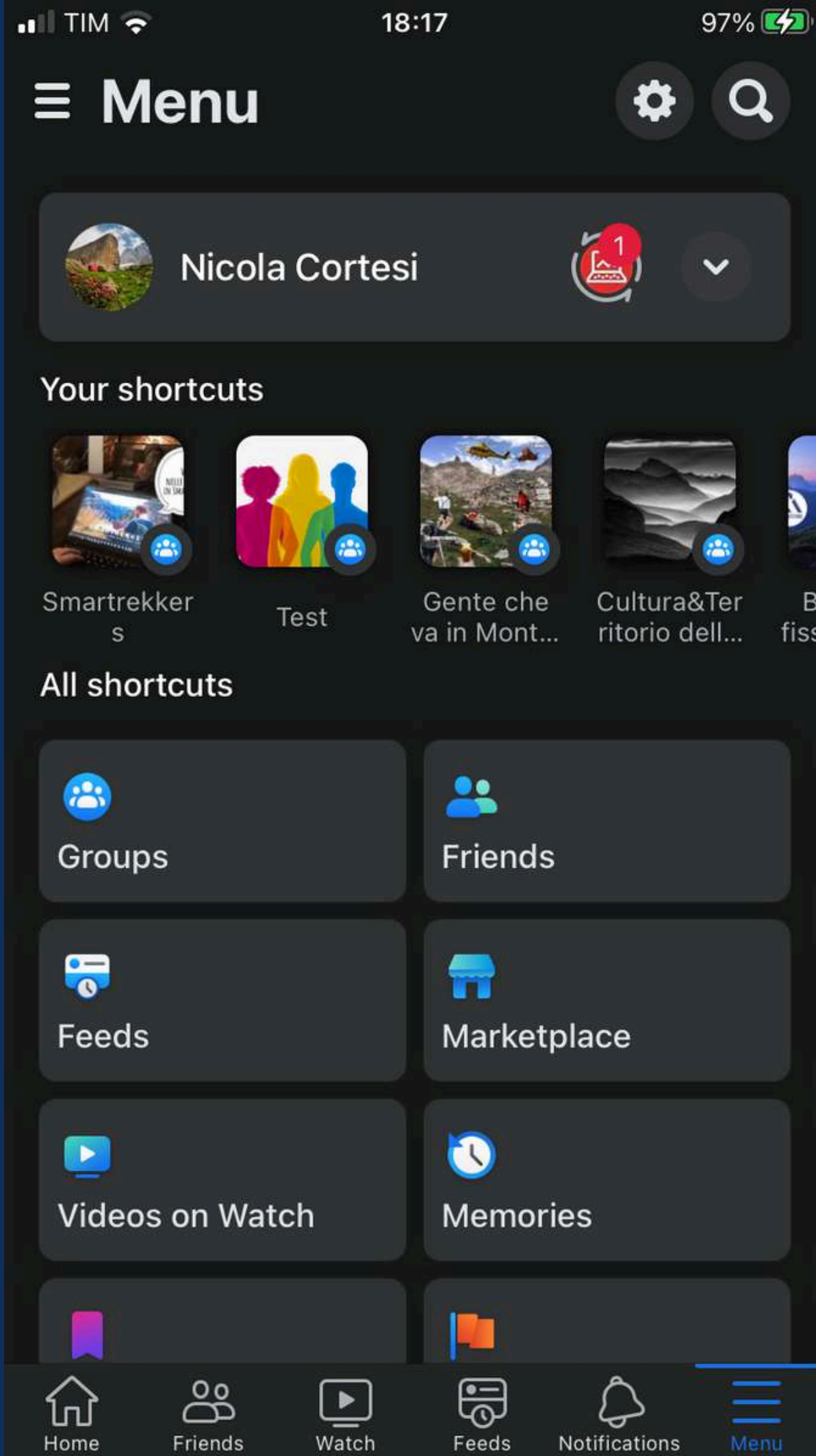
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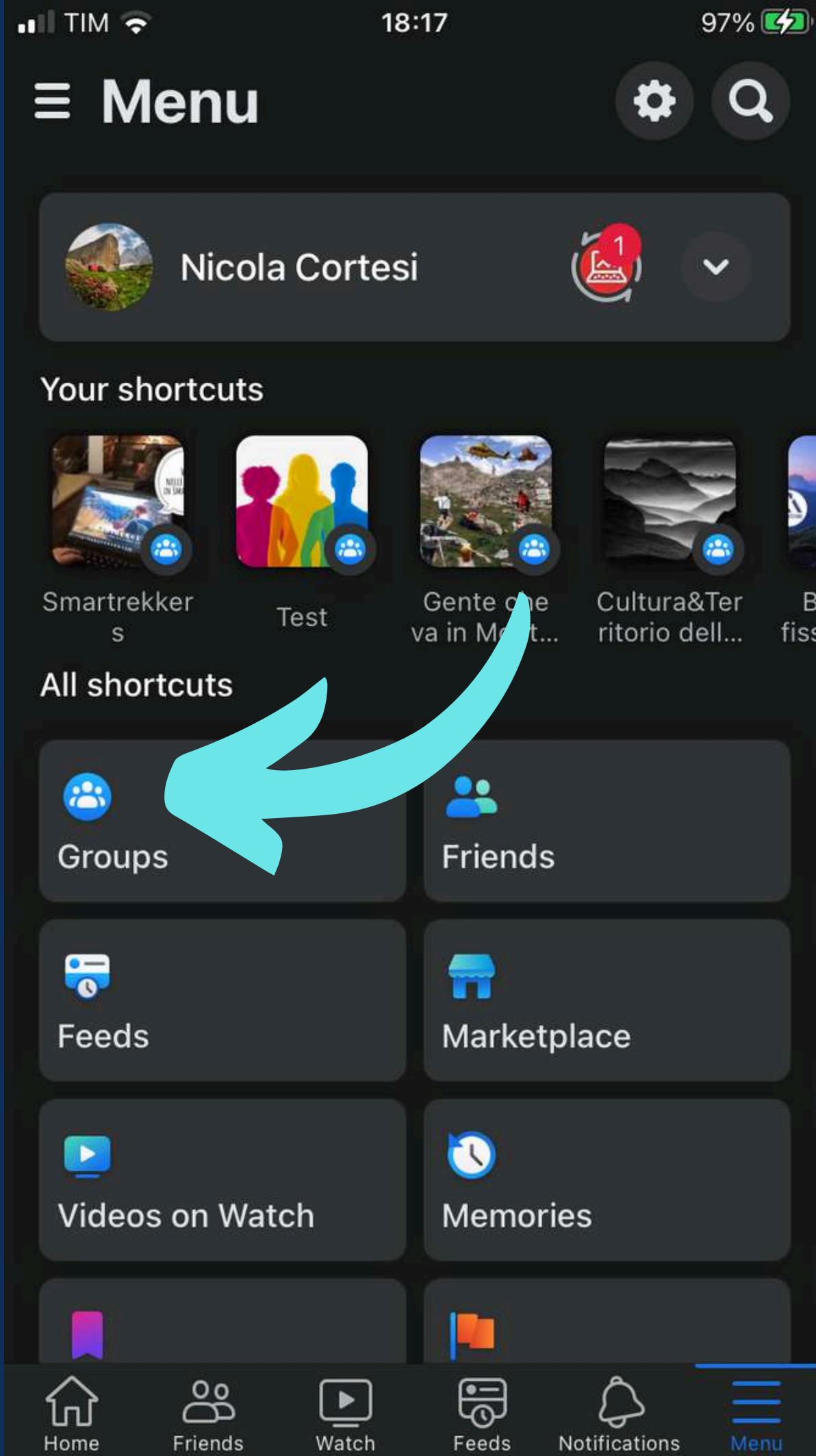
Course materials

- Lesson 1
- Facebook communities
- Dolomites for Beginners (Facebook)
- TED Talk of Simon Sinek about the rule of the Golden Circle
- Time Travelers (TikTok)
- Time Travelers (YouTube)



## GROUP CREATION

Open facebook on your smartphone and select the **Menu** icon at bottom right (with the 3 horizontal lines)

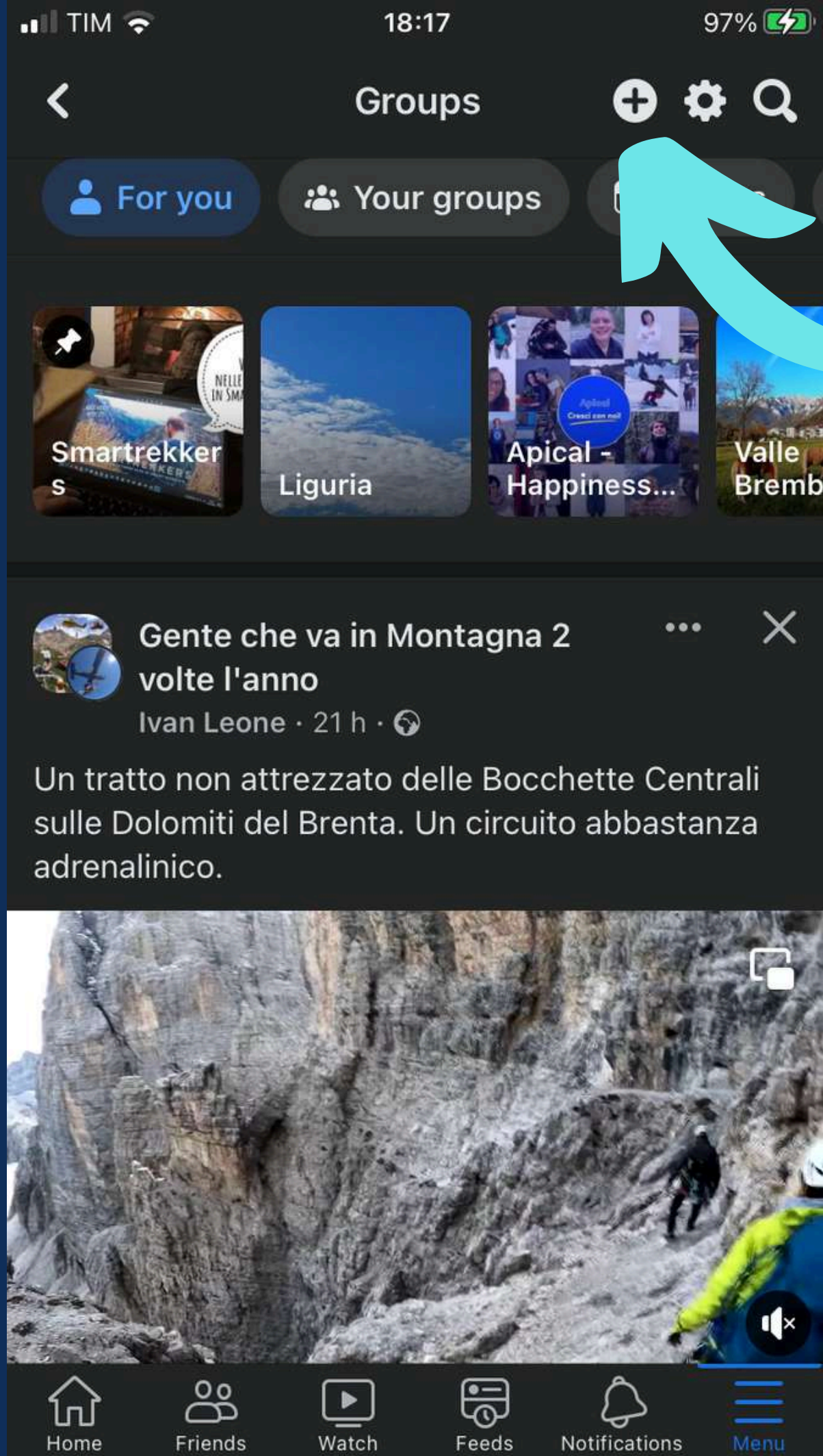


# GROUP CREATION

Then, click on Groups icon at left

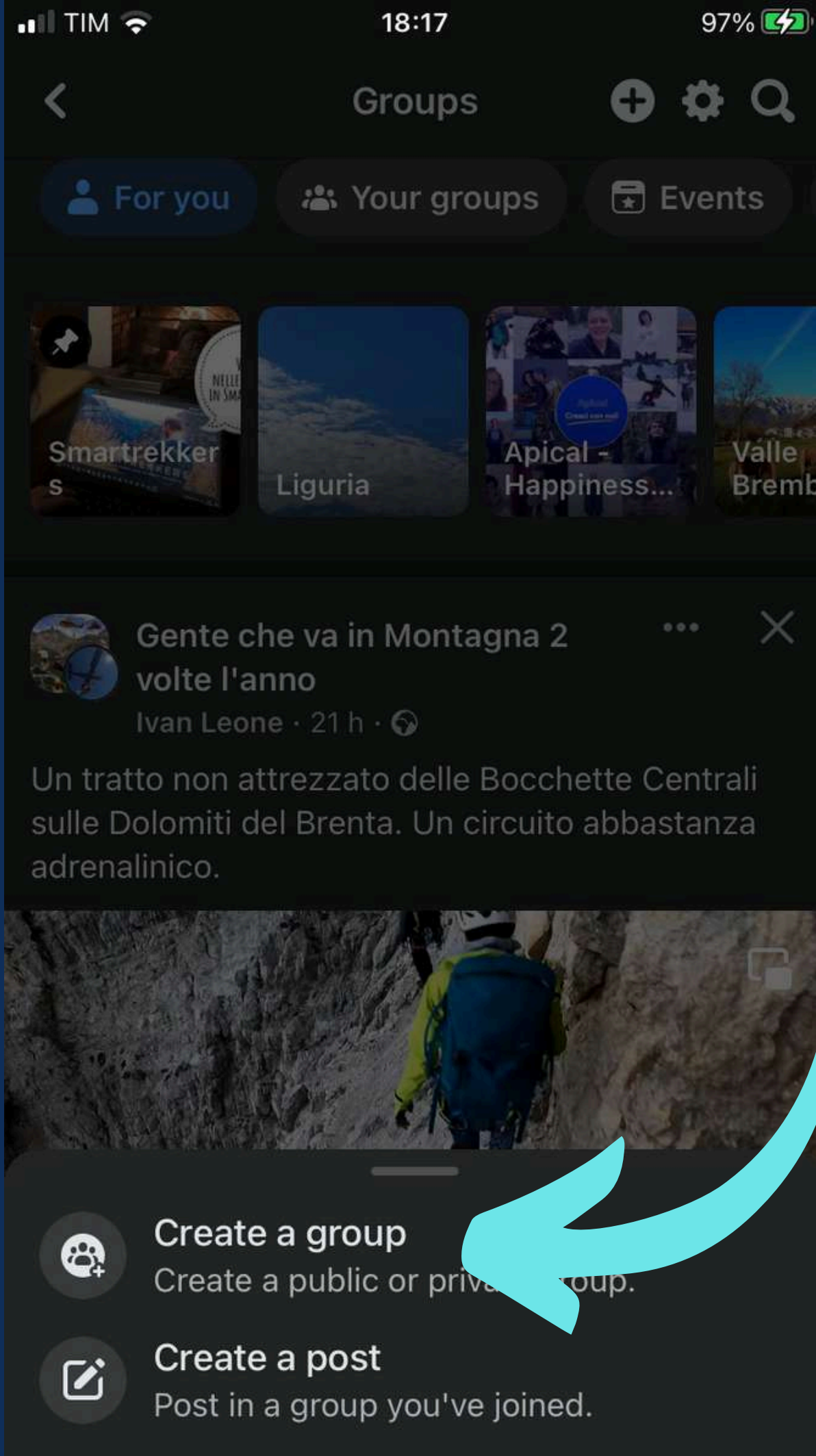






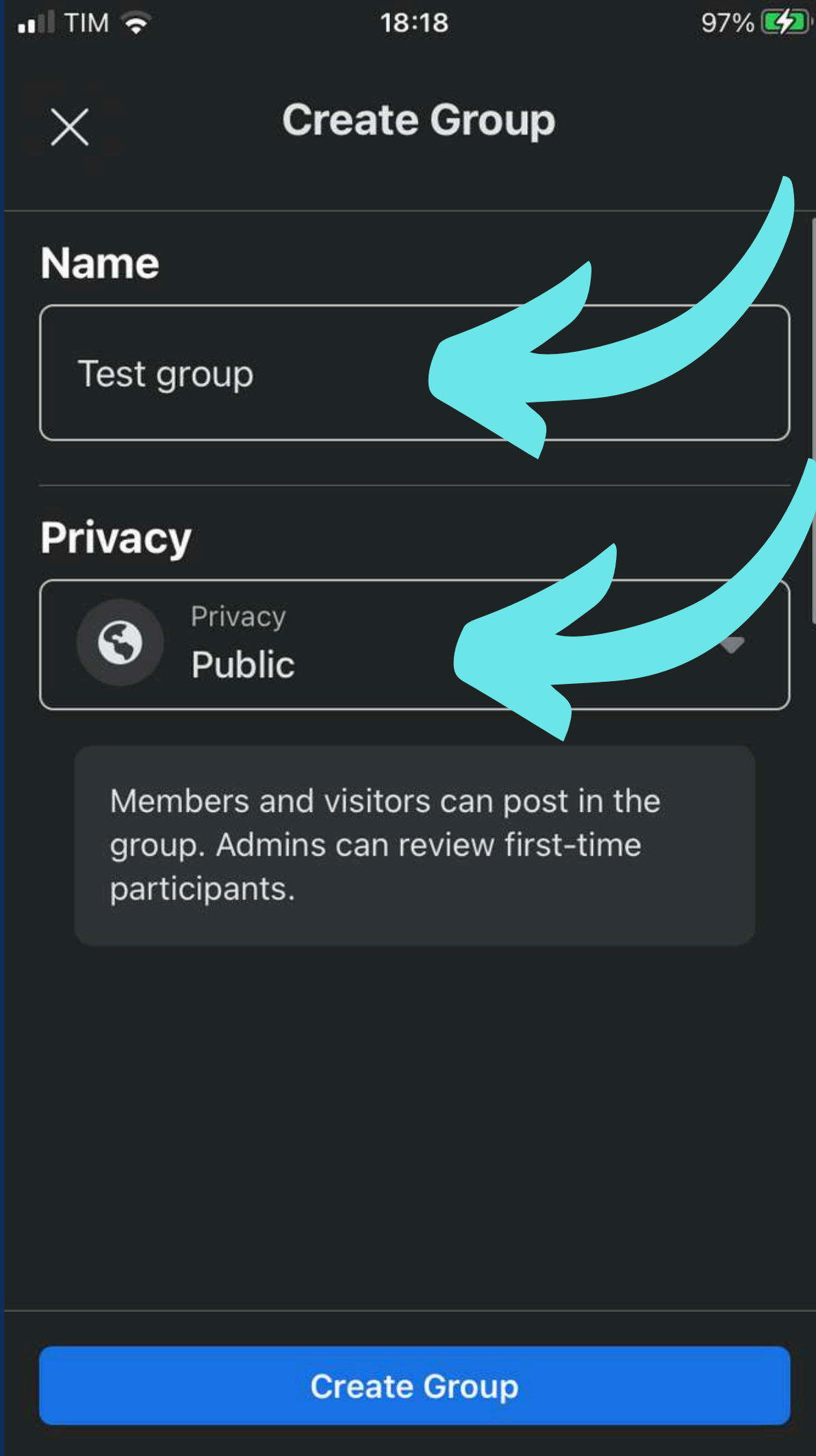
## GROUP CREATION

Click on the + icon at top right to create a new group



## GROUP CREATION

Click on Create a group to confirm the creation of the group



## GROUP CREATION

Set the group name and the group type (Public)

# FACEBOOK GROUPS

There are three types of Facebook groups, depending on their privacy settings:

- Public
- Closed
- Secret

## FACEBOOK GROUPS

Public groups are open to everyone. Anyone can view the group, its members, and their posts. Anyone can also share any posts outside the group

## FACEBOOK GROUPS

Closed groups are open to everyone. Anyone can view the group and its members, but only members can see group posts, and no one can share them outside the group

## FACEBOOK GROUPS

Secret groups are only open to members. Invitation is required to become a member. People who are not members are **not even able to see that the group exists**

## FACEBOOK GROUPS

Of course, for a new brand, the more people can find its community the better, so the choice is limited to open a **public group** or a **closed group**



## FACEBOOK GROUPS

Public groups tend to grow faster than closed groups while closed groups tend to have more interactions

## FACEBOOK GROUPS

Group's privacy settings can be changed from public to private but **not** from private to public.



### Invite people

- Share group
- Invite via email  
Send an email invitation to people

Suggested Bergamo, Italy Groups

#### Suggested

Search for people

#### Friends

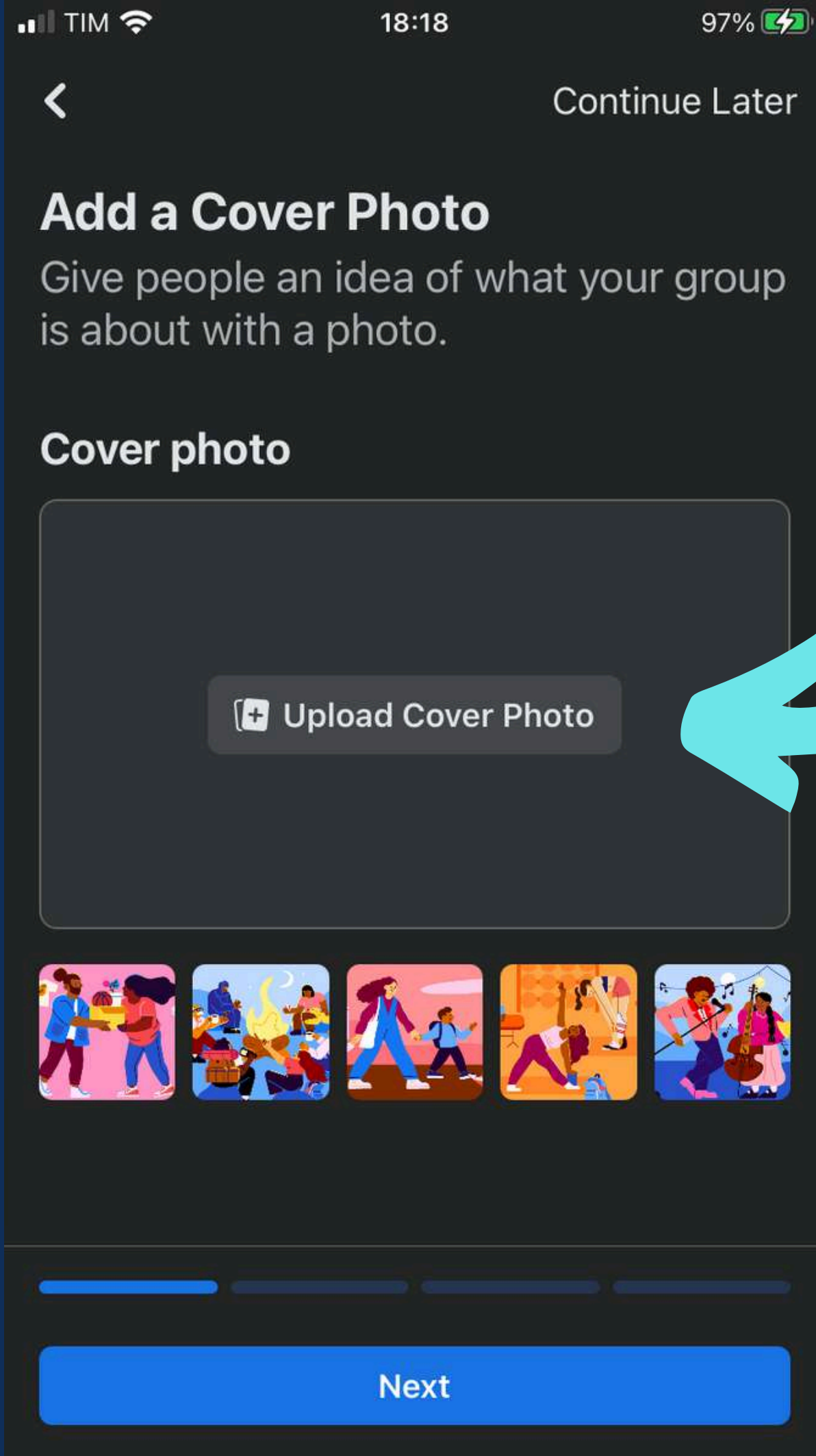
- Giovanna Migliorati Invite
- Pat E Adri Alborghetti Invite
- Silvano Moroni Invite
- Laura Bianchini Invite

**Next**



# GROUP CREATION

Click on **next** without taking any of the actions suggested in the screen



## GROUP CREATION

In this step you can select a cover photo to upload, but at present you can skip it and upload it later.





Continue Later

### Add a Description

Describe your group so people know what it's about.

Describe your group



Next



## GROUP CREATION

Skip the description field too



### Choose goals

Choose the goals that best describe what people will be doing in your group.

- Meet people
- Plan and coordinate
- Learn or share an interest
- Give and get support
- Help in an emergency or crisis
- Buy and sell
- Promote a business

Progress indicator: 4 bars, 1st bar filled

**Next**

# GROUP CREATION

## Do not select any goal and click on Next





## Create a Post

Set the tone of your group and welcome new members with a post.



Nicola Cortesi

Members of Test group

Write something...

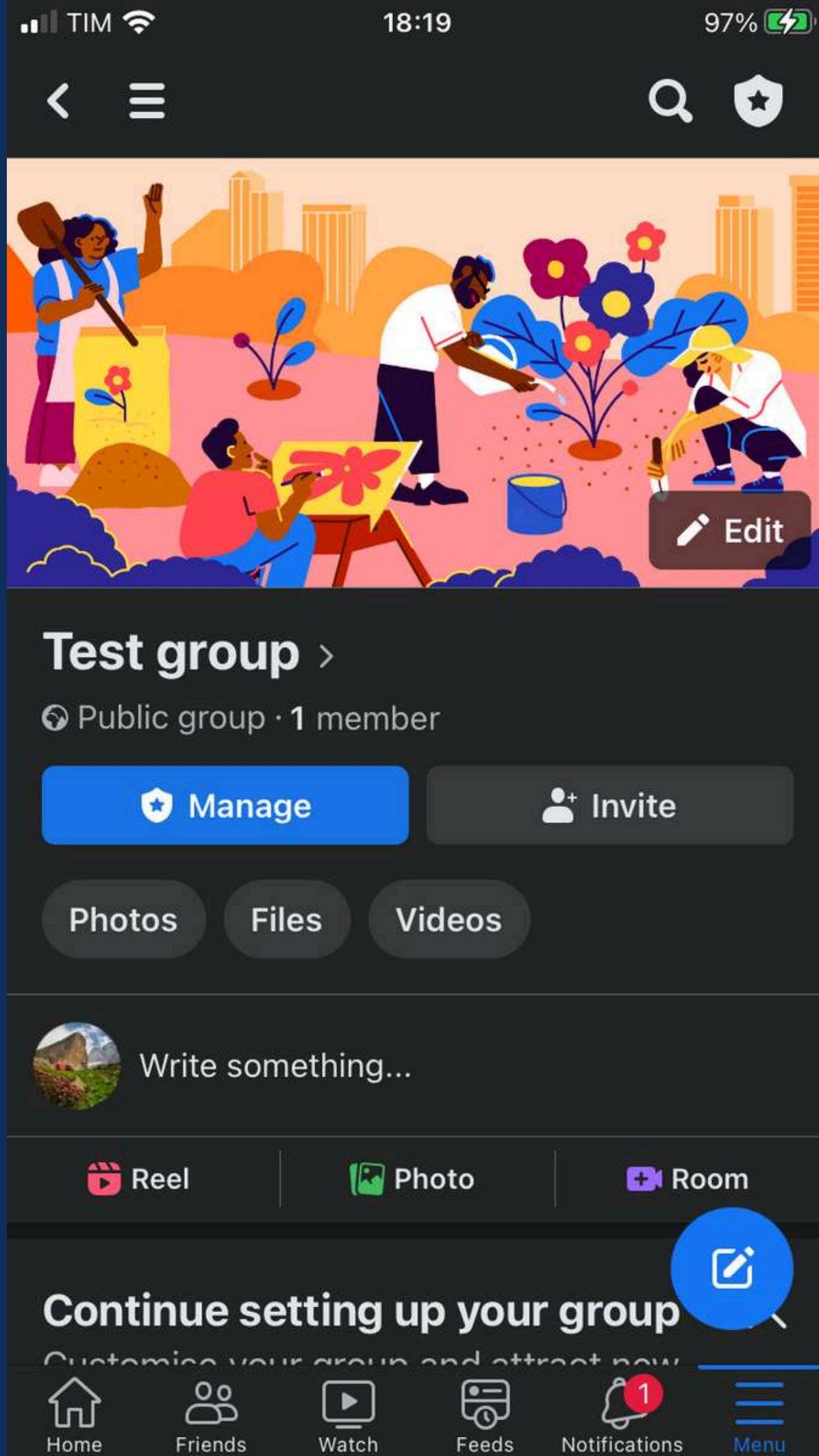
Done



# GROUP CREATION

Do not create any post yet, just click on Done





## GROUP CREATION

Your group should be ready!

Do not join the other groups yet or invite the other group members as admin yet





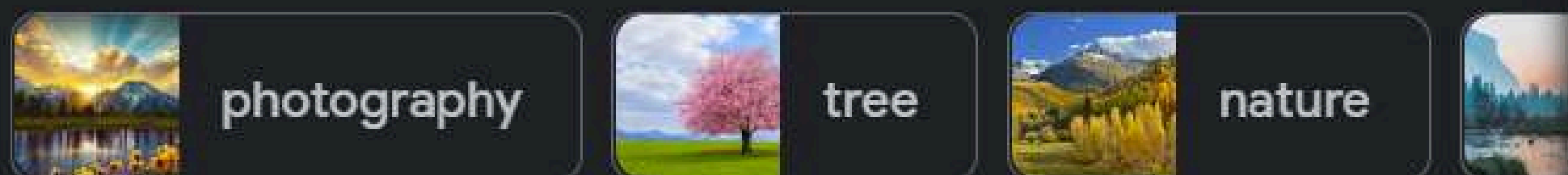
Select a **cover photo** for your community in **landscape** format. It can be yours or taken from Internet if it has the "**Creative Commons**" usage rights



Tutti Immagini Video Notizie Libri

Dimensioni Colore Tipo Data/ora

Diritti di utilizzo  
Usage rights

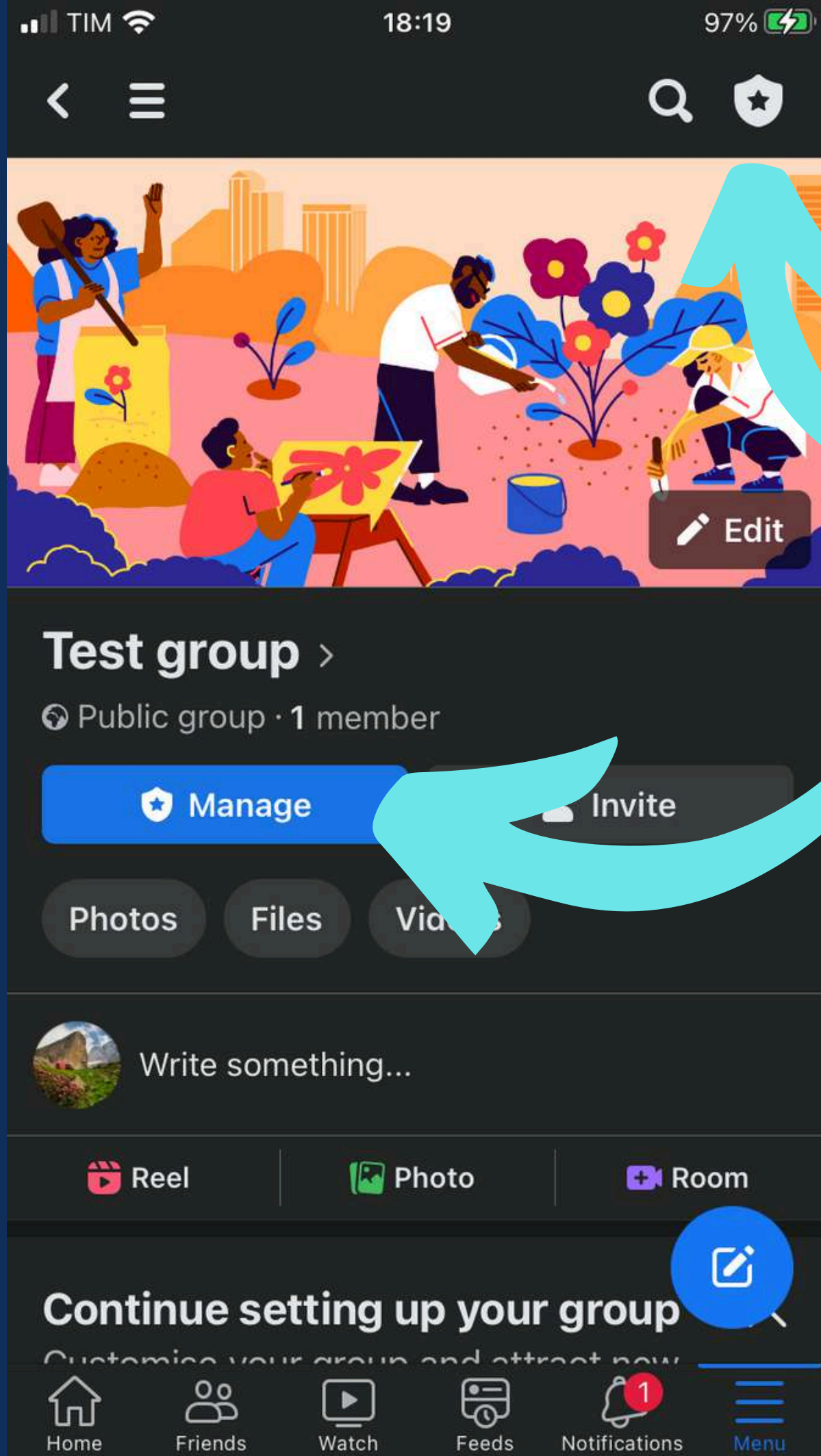


- Tutti
- Licenze Creative Commons
- Licenze commerciali e altre licenze

Risultati relativi a *landscape*

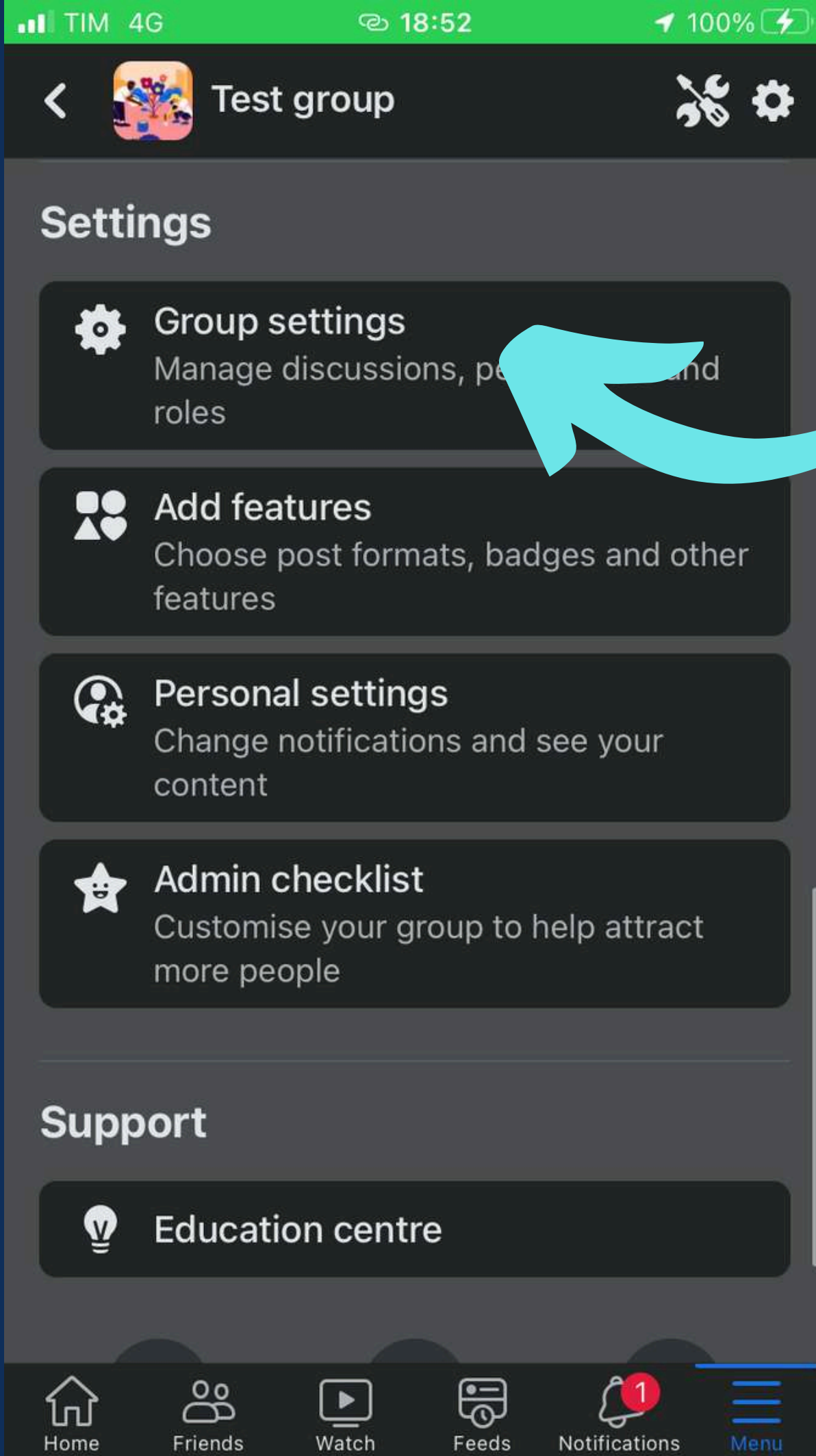
Cerca invece *lanscape*

Select a **picture** for your community in **landscape** format.  
It can also be a picture taken from Internet if it has the  
"Creative Commons" usage rights



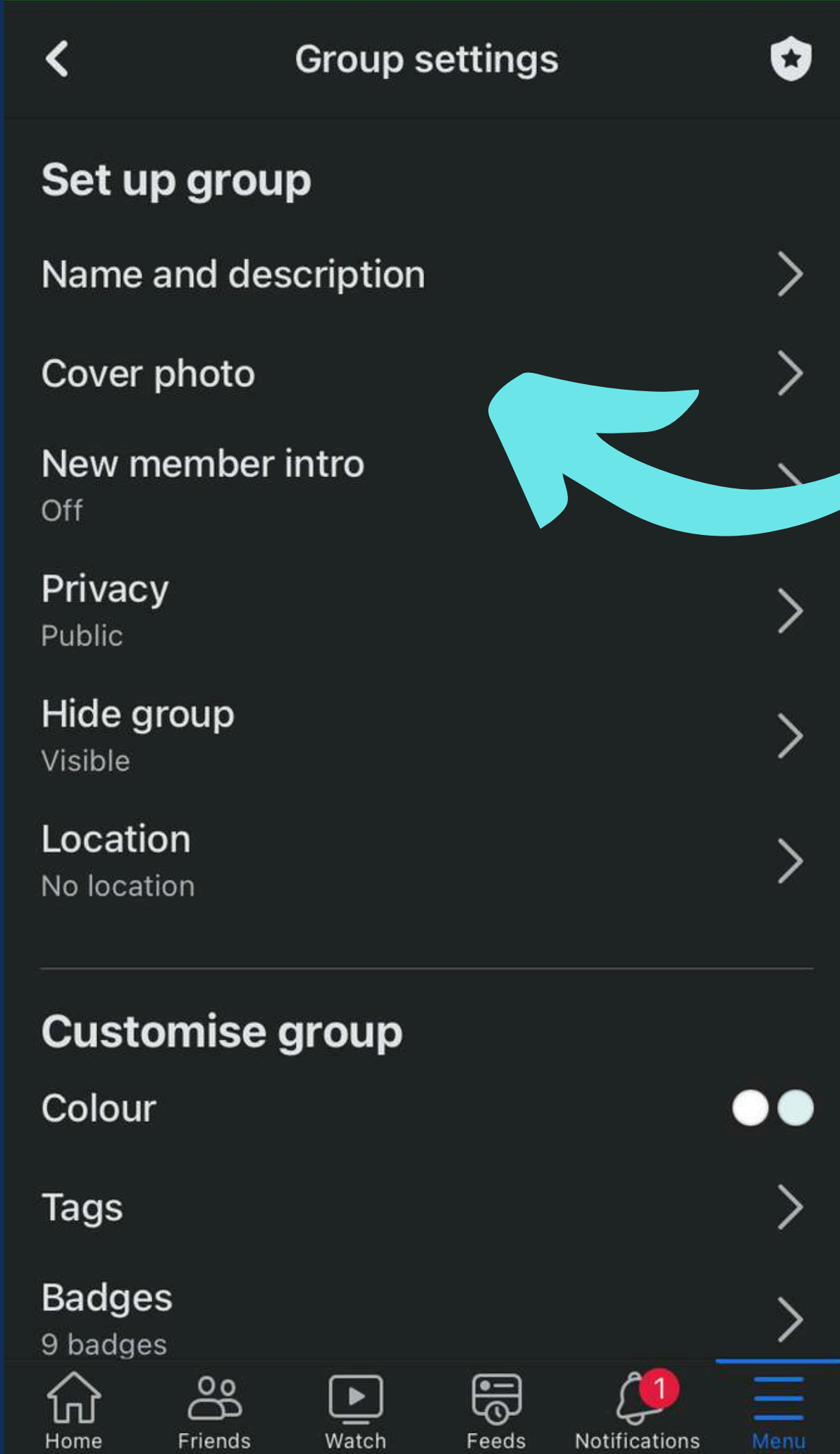
## COVER IMAGE

From the Manage -> Group Settings menu, you can set the cover image of the group



## COVER IMAGE

Scroll down until the "Group settings" menu appears



# COVER IMAGE

Scroll down until the "Group settings" menu appears