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INTERNET

Instant messaging: the message was delivered, but the human disappeared

An alarm sounded at the Instant Messaging Control Centre, named after the Two Blue Check Marks. No server had failed, the Internet was working, and the electricity was still on. Greg sent a message thirty seconds ago, saw “Read”, and received no reply. Management declared a state of heightened readiness. 📱🤣

The express-delivery postman

— I sent Agnieszka a message saying “Hi” — announced Greg.

— Wonderful — replied the dispatcher.

— Has it arrived?

— The app reports delivery.

— THEN WHY ISN'T SHE ANSWERING?!

— She might be doing something else.

— BUT SHE HAS A PHONE!

— You have a fridge, too. You don't respond to every beep it makes.

An **instant messenger** lets people exchange messages, pictures, files and voice notes quickly, and many also support calls. Unlike **traditional email**, users typically see an ongoing conversation, with messages appearing almost immediately. Servers, apps, network connections and recipients' devices work behind the scenes.

— An express mail carrier, then?

— Yes. But an express mail carrier isn't the recipient's personal secretary.

— He can't remind her to reply?

— I wouldn't want to be that mail carrier.

Sent, delivered, read: three different disasters

The first light appeared on the control panel.

— Sent! — Greg shouted.

Then another.

— Delivered!

And finally a third.

— Read! SO WHERE'S THE REPLY?!

The dispatcher took off his glasses.

— “Sent” may mean your app handed the message to its service. “Delivered” typically refers to reaching the recipient's account or device, depending on the messenger. “Read” means the app recorded an opening or marked the message as read. **None of these states guarantees understanding or a reply.**

Not all messengers use the same icons or rules. Read receipts can sometimes be disabled, and previewing a notification doesn't necessarily mark the whole conversation as read.

— What about two blue check marks?

— They aren't a universal symbol in every application.

— Why does everyone obsess over them, then?

— Because technology delivers information faster than people learn patience.

More than one phone at the control centre

Greg wrote from his phone, then opened the same conversation on his laptop.

— Hey! My message is here too. Did you move my phone?

— No. Applications can synchronize conversation history and state across devices.

— Is everything stored on one server?

— That depends. Some services keep history on servers; others use different synchronization mechanisms. Some data may stay only on devices or in encrypted backups.

When the recipient is offline, a messaging service often stores messages until delivery becomes possible. That doesn't mean every app behaves identically or keeps undelivered messages forever. Groups, reactions, images and edited messages also need ways of sharing state between participants.

— What if I switch off my phone?

— You may receive messages later, depending on the service and your devices.

— What if I turn off every device?

— Then things get quiet.

Greg considered this.

— Sounds like a premium feature.

IRC: before the blue check marks arrived

A keyboard clattered at the end of the corridor. An elderly administrator walked in carrying a terminal.

— WHO'S TELLING THE HISTORY OF MESSAGING WITHOUT IRC?!

— And you are…? — asked Greg.

— Internet Relay Chat. Born in 1988. Call me IRC.

— You're still running?!

— I am. And you still can't wait for a reply?

IRC was one of the pioneers of real-time text conversations on the Internet. People connected using clients such as the once-famous **mIRC** to servers organized into IRC networks. They entered channels usually marked with a **#**, talked in groups and exchanged private messages. You didn't need a person's phone number. A server, nickname and channel name were enough.

— Something like `#computing`? — asked Greg.

— Exactly. Type `/join #computing` and you're in.

— What if I want a different nickname?

— `/nick Greg_The_Great`.

— And if I want everyone to know I'm making coffee?

— `/me makes coffee`. Just don't turn it into an automated announcement every minute.

A channel operator appeared with an @ symbol beside their nickname.

— WHO'S SHOUTING IN ALL CAPS?!

— I'M JUST TESTING THE PROTOCOL! — explained Greg.

— Then test it more quietly. Channel operators could enforce rules, grant privileges and remove particularly troublesome visitors. Bots could also greet users, automate tasks and help moderate channels.

IRC had no single central owner of the entire service. There were separate networks and servers, and many classic chat setups did not provide a convenient message history that automatically followed you to a new device. Leave a channel without keeping logs, and you might miss the conversation entirely. Traditional IRC also didn't provide end-to-end encryption by default.

— So you're the great-grandfather of every modern messenger?

— An important pioneer of chats and channels, yes. But not every later messenger was built from my code. Let's not claim somebody else's children.

— And where are your blue check marks?

— Greg, back then our best read receipt was somebody replying “lol”. 🤣

Gadu-Gadu and the age of the yellow sunshine

An older operator walked into the centre wearing a little yellow sun on his jacket.

— Who remembers their Gadu-Gadu number? — he asked.

Greg raised his hand.

— Me! And the sound of an incoming message!

— Back in my day, an “I'll be right back” status could last three days.

Gadu-Gadu became a symbol of online chat in Poland in the early 2000s. Other pioneers included ICQ and MSN Messenger, while Skype later popularized Internet voice calls. The names, designs, devices and features changed, but the main idea stayed familiar: talk quickly with somebody who is somewhere else.

— How can I remember numbers from twenty years ago, but not where I left my glasses?

— Perhaps your glasses had no online status.

— They do. “Invisible”.

Five messengers, five ideas of a conversation

The director organized a messaging expo.

WhatsApp arrived with a contact list, offering convenient conversations and end-to-end encryption for personal messages and calls.

Signal carried a sealed envelope.

— Privacy and encryption are part of the foundations here, not decorations at reception.

Telegram unfolded a map of enormous groups and channels.

— I support large communities and cloud-synchronized conversations.

— Is every chat automatically end-to-end encrypted? — Greg asked.

— No. Ordinary cloud chats and separate Secret Chats use different security models.

Messenger arrived wearing a badge saying “Friends and contacts”.

— I'm linked to the Meta ecosystem, but I'm also a separate app for talking to people.

Finally Discord appeared with a whole bus of participants.

— We have community servers and text and voice channels. The word “server” in the app doesn't mean you need to install a computer in your basement.

— So there's no single best messenger for everything?

— Different needs, features, rules and trade-offs.

— I just wanted to say “Hi”.

— Which explains why you now have five apps.

An encrypted envelope and the keys

Greg placed two letters on the table.

— This one has a lock during transport, and that one is encrypted from sender to recipient. Same thing?

— No — answered the security specialist.

Transport encryption protects data as it travels between an app and a service. Depending on the architecture, the server may still have access to the message. **End-to-end encryption (E2EE)** is designed so that the participating devices, rather than an intermediary server, can read the contents. Details depend on the app, conversation type and key management.

— If I have E2EE, can absolutely nobody else see anything?

— Don't promise miracles. Some metadata may still be visible, such as aspects of who communicates and when. Devices can also be compromised, screenshots taken or conversations shown to somebody nearby.

— Somebody could photograph my top-secret message?

— With another phone, or even a camera.

— Should we ban cameras?

— Start by not sending secrets to people you don't trust.

Backups don't always have the same padlock

— I changed phones and want all my conversations back — Greg announced.

— Let's see which backup and transfer methods your messenger supports.

— Isn't signing in enough?

— In some services, lots of history returns. Elsewhere it needs a transfer or backup, and some chats may be unavailable.

How messages and backups are stored matters for security. **End-to-end encryption of live conversations doesn't automatically imply identical protection for every backup.** Some apps provide additional backup encryption or device-to-device transfer.

— I can have a very secure chat but a poorly protected archive?

— That risk can exist if you choose the wrong setup.

— I'd like instructions.

— Certainly. Just don't post them in a group called “All My Passwords”.

Notifications, groups and the Mute button

Greg's phone vibrated twenty-four times.

— WHAT HAPPENED?!

— The “Neighbours” group is debating whether the stairwell lights should stay on for sixty or ninety seconds.

— Why am I in that group?

— Somebody added you.

— I demand an official exit procedure.

Messengers offer groups, channels, reactions and notifications, but they don't all work the same way. Push notifications often wake an app or tell it new data is waiting; they aren't proof that a human read a message. Muting a conversation generally changes how you're alerted, not whether messages arrive.

— So I can mute the neighbours and still belong to the group?

— Yes.

— And they don't get a notification that I've muted them?

— Usually not.

— THAT IS THE BEST FEATURE IN COMPUTING!

Not everything from a friend is really from a friend

Greg received a message: “Hi, could you lend me some money? Urgent.”

— It's from my friend! — he said.

— Have you checked that the account hasn't been compromised? — asked Agnieszka.

— It's got his picture!

— A picture isn't proof of identity.

Messengers can be abused for scams, account takeovers, suspicious links and impersonation. Keep apps updated, lock your devices, enable available account protections and verify unusual requests through another trusted channel. Some encrypted messengers also let users verify contacts using safety numbers or keys.

— So I should call him?

— If the request is suspicious, that's sensible.

— And if he picks up and asks for money anyway?

— At least you can confirm whom you're speaking to.

— Assuming I dial the right person.

— That's a different department.

A final report on delivering a human

That evening the dispatcher called Greg over.

— Your message saying “Hi” was delivered.

— I know.

— It was marked read.

— I KNOW!

— And a reply has arrived.

— FINALLY! What did Agnieszka say?

— “Hi. I was hanging up the laundry.”

Messengers speed up information exchange, but they don't replace human decisions. Message statuses depend on the app, synchronization on its design, and privacy on the encryption model and settings. A suitable messenger meets the participants' needs without promising more than it can deliver.

— So the whole emergency was unnecessary? — asked the director.

— NO! — Greg protested. — Now I need to find out why she replied in only one sentence.

The dispatcher switched off the alarm and enabled Do Not Disturb.

The Instant Messaging Control Centre, named after the Two Blue Check Marks, reports: all messages were delivered according to the services' capabilities, and alarms fell after read receipts were switched off. Greg appealed on the grounds that “two blue check marks should legally require an answer”. The committee rejected his request. Agnieszka remains unavailable. Status: “Busy with laundry”. 📱💬🤣❤️