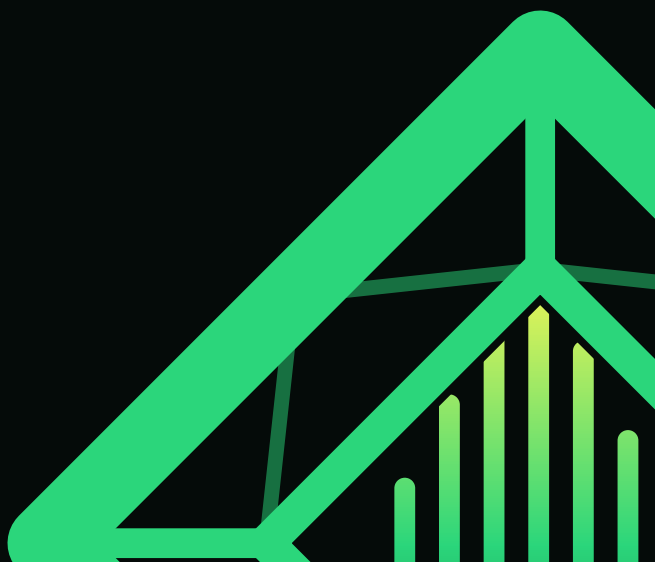
Frothly

FR-WP-2026-114

WORKING PAPER

Machine Spirits

Folk belief and ritual in everyday IT.



Dr. Cassia Orsellio · Dr. Pasqal Haneumann

Human Factors · Oct 2026

ABSTRACT

From restarting a router three times “for luck” to thanking a voice assistant, people build private rituals around the machines they depend on. This working paper reports on interviews with 1,400 office workers and IT staff in twelve countries, and on three months of observation in a hospital records department and an industrial maintenance facility.

We find that machine rituals are nearly universal, that technical expertise does little to reduce them, and that they are not simply superstition: many encode real knowledge about undocumented behavior. They also shape who gets blamed when things go wrong, and whether failures are ever reported.

KEY FINDINGS

01 71% of respondents perform at least one ritual they believe improves a device’s behavior but cannot explain.

02 Expertise is no protection: 64% of IT professionals reported at least one ritual, usually around legacy systems.

03 Rituals shape reporting. Respondents who described a device as having “moods” were less than half as likely to report its faults.

04 Many rituals work. In 41% of the cases we could test, the ritual corresponded to a real, undocumented technical behavior.

01

Introduction

Every organization runs on two kinds of knowledge about its machines: the documented kind, found in manuals and ticketing systems, and the kind passed on by word of mouth. The second kind is rarely written down, often contradicts the first and is, in many workplaces, the knowledge that actually keeps things running.

This paper is about that second kind of knowledge, and the practices that carry it. We call these practices *machine rituals*, and the beliefs behind them *machine spirits*. The term is not meant to suggest that our respondents believe their computers are inhabited, though a few do. It reflects the way these practices treat machines as having temperaments that must be understood, respected and occasionally appeased.

02

How we studied it

Between March 2025 and May 2026 we conducted semi-structured interviews with 1,400 people in twelve countries: 1,050 office workers in roles that depend on computers, and 350 IT professionals responsible for maintaining them. Interviews asked about routines, workarounds and beliefs concerning specific devices, and about what respondents did when those devices failed.

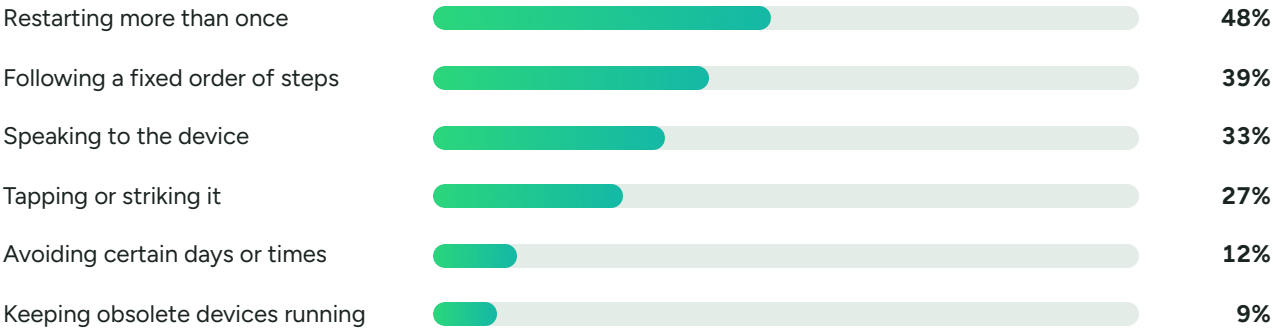
We supplemented the interviews with three months of observation at two sites chosen for their reliance on old and poorly documented equipment: the records department of a regional hospital, and a facility responsible for maintaining industrial control systems. Where a ritual made a testable claim about a device, we worked with site engineers to test it.

03

A catalogue of rituals

The rituals we encountered fell into six broad families. The most common were procedural: restarting more than once, or performing steps in a fixed order that the documentation did not require. Others were social, treating the machine as an interlocutor to be encouraged or apologized to.

FIGURE 1 Share of respondents performing each family of ritual



n = 1,400. Respondents could report more than one ritual.

TABLE 1 How respondents explained their rituals

Ritual	Typical explanation
Restarting more than once	“The first restart doesn’t take.”
Following a fixed order of steps	“It doesn’t like being rushed.”
Speaking to the device	“It works better when you’re nice to it.”
Tapping or striking it	“It wakes it up.”
Avoiding certain days or times	“Never update anything on a Friday.”
Keeping obsolete devices running	“It has earned its place.”

The litany at the maintenance facility

The industrial site deserves particular mention. Technicians there kept a laminated card taped above a forty-year-old control console, setting out the order in which its systems should be woken after a power failure. The card included several steps that engineers later confirmed had no technical effect, and ended with a line that read simply: “Thank it.” Staff were unanimous that the console behaved better when the card was followed in full, and no one we spoke to was willing to skip a step.

The same technicians described applying thermal compound, lubricants and contact cleaner with a care that went well beyond the manufacturer’s instructions, and spoke about this work in terms more often reserved for devotional acts than for maintenance. One described the console as “older than half of us, and it has never once let us down, so we look after it properly.”

04

Why rituals persist

It would be easy to dismiss these practices as superstition. Our observations suggest a more interesting picture. Of the rituals we were able to test, 41% corresponded to a real technical behavior that appeared in no documentation: the second restart that clears a cache the first one misses, the pause that gives a slow peripheral time to initialize, the order of steps that avoids a race condition nobody had written down.

Rituals that did not correspond to any technical behavior still served a purpose. They gave people a sense of agency over systems they did not understand, a shared vocabulary for talking about failure and, sometimes, a way to avoid blaming colleagues or themselves.

AT THE LIMIT: THE RELAY STATION

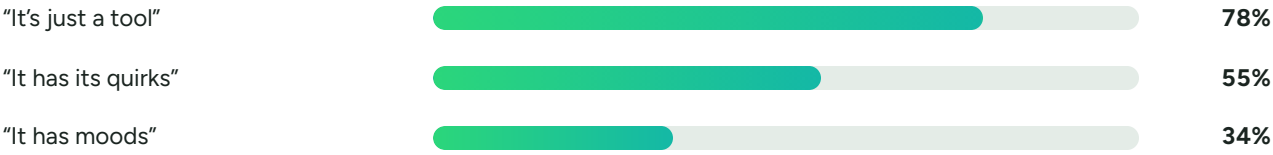
At one energy relay facility, staff told us that the automated management system had developed what they called “its own ideas about what the station is for.” Its performance remained excellent, and the team had adapted by framing every request in terms the system appeared to prefer. We include the case not because it is typical, but because it shows the logic of ritual at its limit: when a system is reliable but opaque, people learn to speak its language.

05

Rituals and blame

The most consequential finding concerns reporting. We asked respondents what they did the last time a device they used regularly failed. Those who described the device as simply a tool usually reported the fault. Those who described it as having moods, preferences or good and bad days usually managed it themselves.

FIGURE 2 Share of respondents who reported their most recent device fault



Office workers only, n = 1,050.

This matters for safety and reliability. Faults attributed to temperament are worked around rather than fixed, and the knowledge needed to fix them stays with whoever happens to know the ritual. When that person leaves, the knowledge leaves with them.

06

Implications

Machine rituals are not going away, and attempts to stamp them out usually drive them underground. Organizations would do better to treat them as a source of information.

- *Treat rituals as data.* Ask staff what they do and why. A ritual is often the only record of an undocumented behavior.
- *Write down what works.* When a ritual corresponds to a real behavior, put it in the manual and, where possible, fix the underlying cause.
- *Make failure legible.* Systems that explain their own state attract fewer rituals and more accurate fault reports.
- *Do not mock.* Ridicule does not end rituals. It ends the reporting that might have made them unnecessary.

Machines are not inhabited by spirits. But the people who care for them often behave as though they were, and in doing so they preserve knowledge, manage uncertainty and express a real respect for the machines they depend on. Designers and managers who understand this will build better systems. Those who dismiss it will keep wondering why their staff restart everything twice.

References

Calvin, S. (2018). *Robopsychology: A Field Guide.* San Francisco: Frothly.

Chip, J. (2019). Arguing with appliances: a technician's view. *Maintenance Review*, 22, 12–19.

Haneumann, P. (2025). *On the Care of Machines.* Footfall: Koronus Press.

Orsellio, C. (2023). Navigating opacity: how people find their way through systems they cannot see. *Human Factors Quarterly*, 18(1), 33–58.

Powell, G. and Donovan, M. (2004). Field notes from remote installations. *Robotics Field Studies*, 9, 55–80.

Orsellio, C. and Tlass, I. (2025). Superstition, expertise and the legacy system. Frothly Working Paper FR-WP-2025-61.

Acknowledgments

We are grateful to the hospital and maintenance staff who let us watch them work, and who were generous enough to explain their rituals to outsiders. Names of sites and participants have been withheld at their request.

About the authors

Dr. Cassia Orsellio leads Frothly's Human Factors group, which studies how people understand and depend on the machines around them.

Dr. Pasqal Haneumann is Frothly's Chief Technology Officer and spent two decades maintaining industrial control systems.

HOW TO CITE

Dr. Cassia Orsellio and Dr. Pasqal Haneumann (2026). *Machine Spirits* Folk belief and ritual in everyday IT. Frothly Working paper FR-WP-2026-114. San Francisco: Frothly. https://frothly.org/research/machine-spirits/

Frothly

FR-WP-2026-114

Frothly is an independent, not-for-profit research institute studying the systems that increasingly think, remember and decide on our behalf.

We hold no shares, sell no products and accept no funding that comes with conditions on our findings. Everything we publish is free to read.

San Francisco · Vancouver · Newark · Zürich · Chiba

This work is licensed under Creative Commons Attribution 4.0 International.