

Consumer neurotech: Integrating the brain into the digital ecosystem?

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This is also neurotechnology



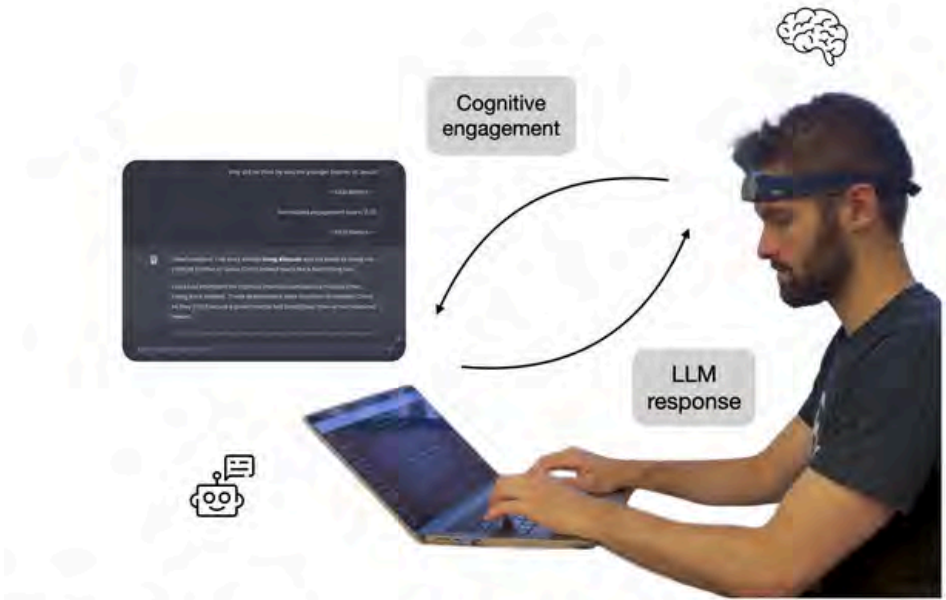
SmartCap (fatigue monitoring)



Neurable EEG headphones



Emotiv earbuds



BCI for human-AI interaction using the Muse Headband

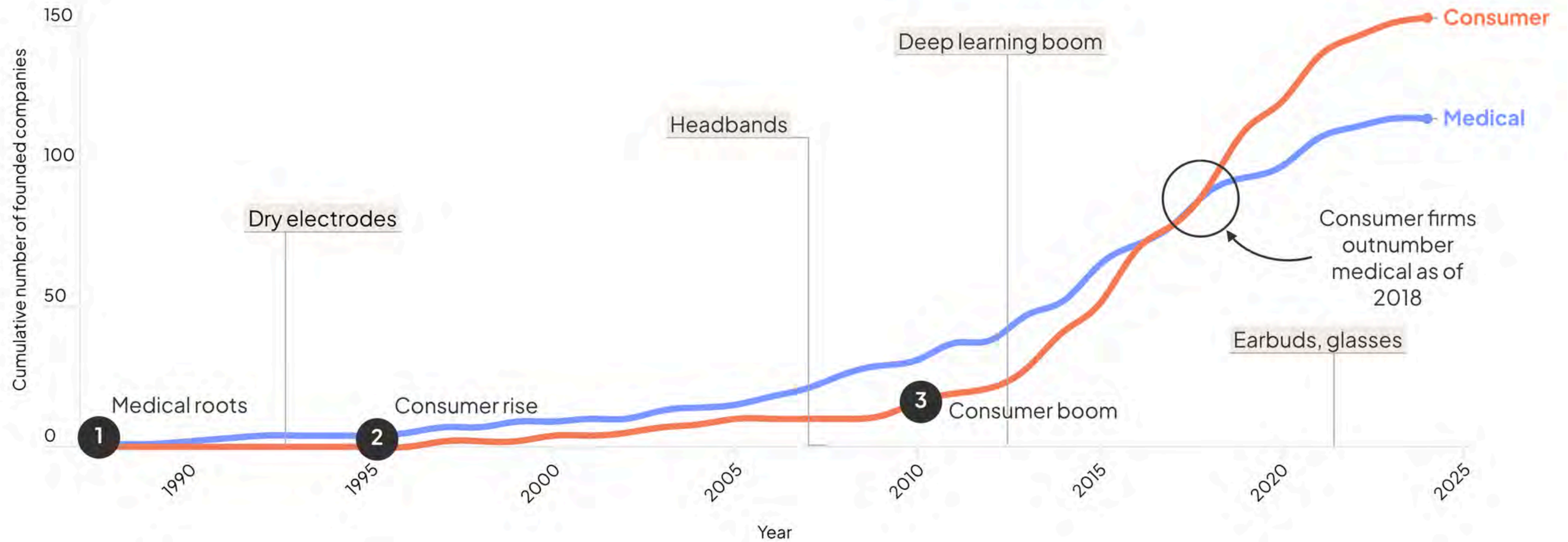


AAVAA EEG glasses

Market trends

A rapidly expanding market

Consumer neurotech now represents **60% of all firms globally**



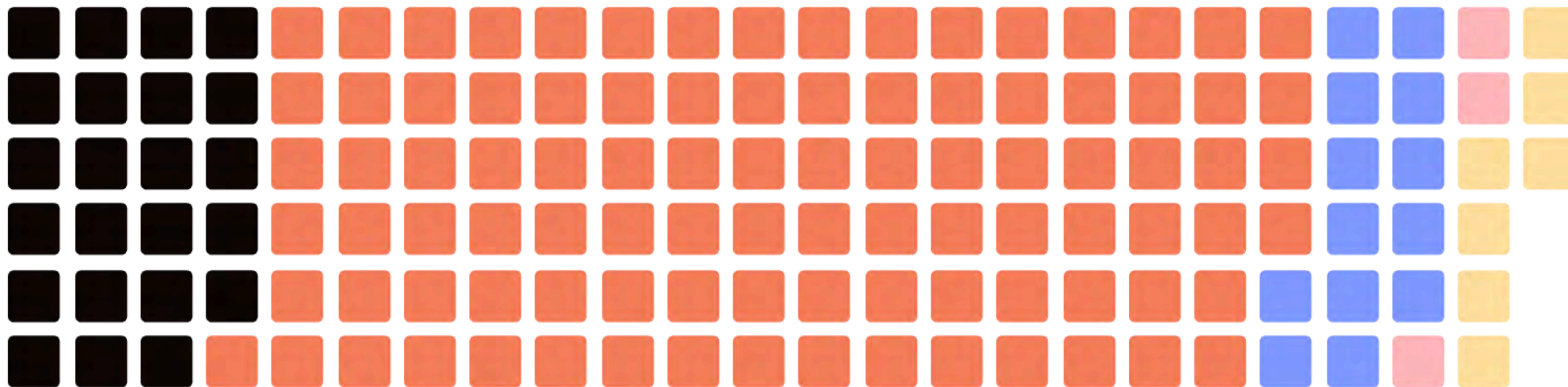
“Neurotech consumer market atlas: How the sector is making moves into the mainstream“. Centre for Future Generations, 2025.

EEG dominates consumer neurotechnology

- It is used by **64% of companies**
- AI, fNIRs, EMG and **multimodalities** on the rise

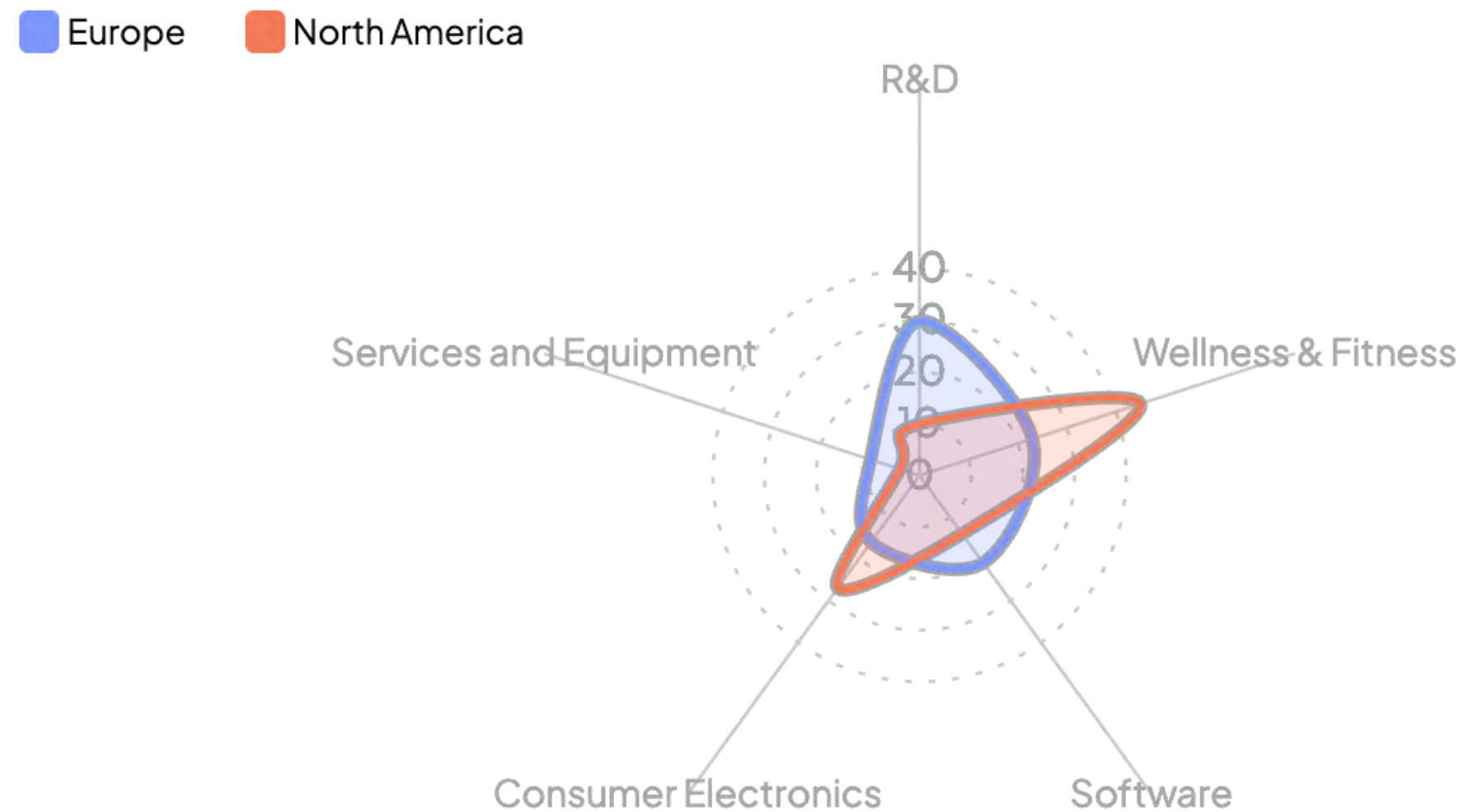
Artificial Intelligence
 EEG
 Electrical Stimulation
 Electromyography (EMG)
 Functional near-infrared spectroscopy (fNIRS)

One company: ■ = 1



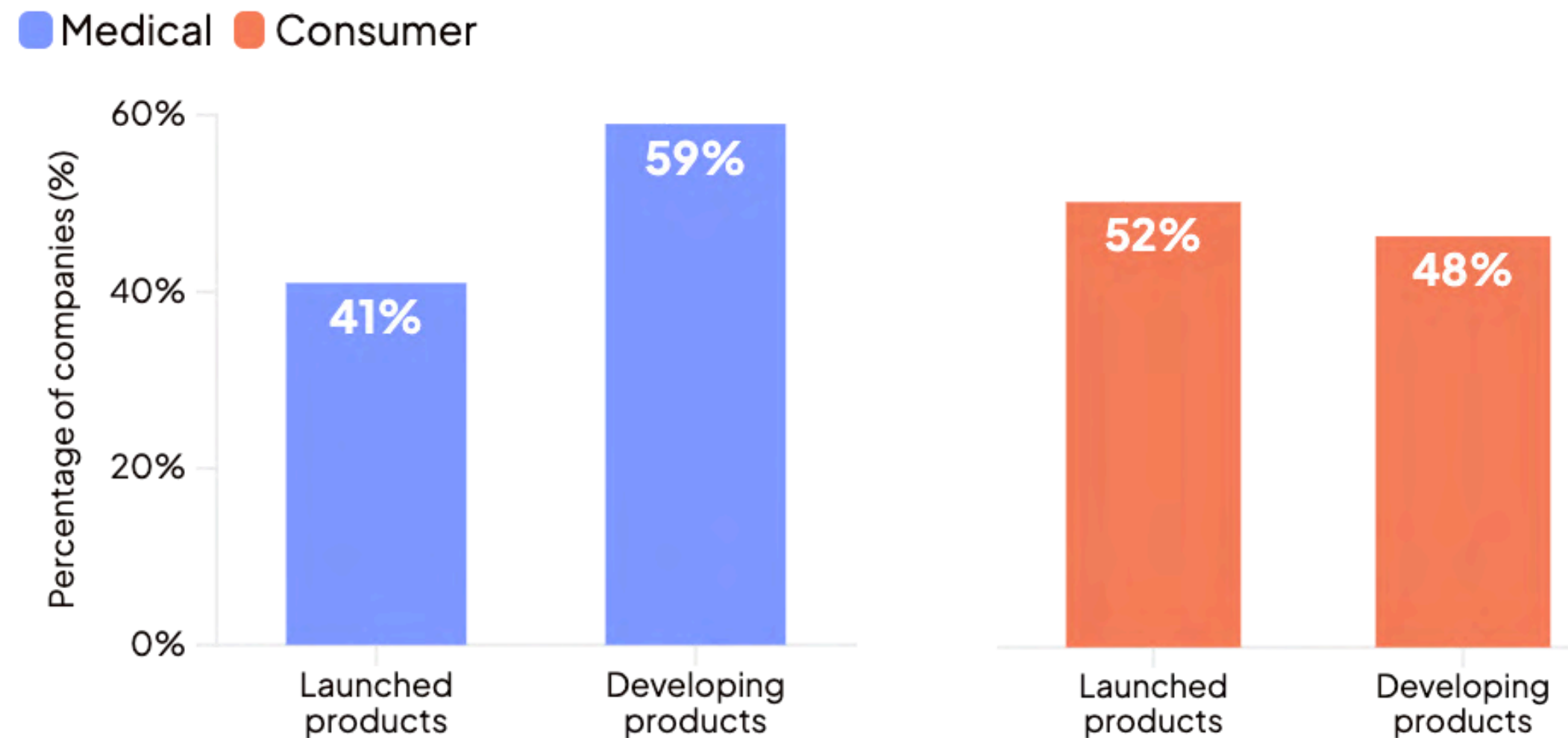
Consumer neurotech is largely driven by the wellness sector

- North America focuses on wellness, Europe on tools for R&D
- Wellness attracts more **private funding**



Consumer neurotech commercialises faster and monetises earlier

- A larger proportion of consumer firms have **products on the market**
- Consumer companies make **comparable revenue** with a **quarter of the funding**



Tech companies are investing, partnering, and building neurotechnology

Big Tech could integrate neurotech into **mainstream** digital platforms and **scale** its reach.



Opportunities

Opportunities

- If developed responsibly, **consumer neurotech offers unique potential**
- **Continuous, remote monitoring** is a **novel capability**, including for medical contexts.
- Consumer tech developers prioritize **comfort** and **usability**
- Consumer and medical neurotech can co-evolve beyond the clinic:
 - **Longitudinal** data collection
 - **Research**
 - **Prevention**

Challenges

Transparency and evidence gaps

50%

of consumer companies were
erroneously classified as medical
by an AI model

50%

of wellness neurotech companies
do not disclose that their products
are not medically certified, **not even**
in their Terms and Conditions.

Nearly 40%

of companies provide **no**
scientific evidence at all for
the claims they make

Risks

- Medical **substitution**
- Hype eroding **trust** in the field as a whole
- Clinically **unvalidated** highly simplified metrics
- Large-scale **cognitive manipulation**



Our policy recommendations

What we propose: A Policy Framework for Borderline Devices

Key measures

1. EU-level oversight mandate

- Avoid fragmentation with harmonised EU oversight
- Dedicated/expanded market oversight agency to track HPDs & coordinate surveillance
- Guidance, certification, & adverse-event reporting

2. Mandatory labelling & transparency

- Standardised EU-wide label: efficacy, safety, data, ethics
- Builds on ISO 82304, Label2Enable, ORCHA
- Single scientifically validated scheme to inform user, not block market entry

3. Stricter rules on marketing & claims

- Clearer legal language to revent misleading, non-evidence-based health claims
- Special care for vulnerable consumers & transient online ads
- Align with Digital Fairness Act for stronger consumer protection

4. Proportionate & supported compliance

- Translate GDPR, MDR, AI Act, etc. into sector-specific guidance
- Codes of practice, model consent forms, reg. sandboxes
- Ensure enforcement is effective but not punitive for SMEs

5. Interoperability with healthcare

- Enable safe, privacy-preserving data flows into health systems
- Use EHDS as entry point for EHR integration
- Support prevention, early intervention & personalised care

Thanks for listening

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