

## Guarantee the quality of digital coaches

E-coaching is on the rise. Smart, personal coaching apps can help us live healthier, more productive, and more environmentally friendly lives. However, there is no guarantee that the new digital coaches are being developed in a reliable and honest manner.

That is the conclusion of the Rathenau Instituut in its report *Sincere support – The rise of the e-coach*.

E-coaching is becoming a broad societal trend. Technology will assist us in all sorts of areas of our private life: from our finances and relationships and interactions with others, to our health and energy consumption.

Sensors integrated into smartphones or wearables enable e-coaches to collect data on our bodily functions, activities, and emotions. Smart software then assesses that information, gets to know the user, and calculates customised advice on how to attain his or her personal goals, whether that means losing weight or being more environmentally aware.

Professional codes, seals of approval, and accreditation programmes have been developed to promote the quality of human coaches. However, these methods for ensuring quality do not apply to digital coaches. It is therefore unclear whether the e-coach is in fact measuring behaviour correctly or calculating its

recommendations honestly. That may mean that the user receives incorrect, commercially slanted, or ineffective advice. It is also unclear to users how producers of e-coaches deal with the intimate information that is collected about their behaviour, emotions and lifestyle, and whose interests the use of that data serves.

The requirements for admitting e-coaches to the market and the standards that should apply are still under development. Given the huge variations in quality between the e-coaches that are currently available, the admission criteria need to be made more uniform. The Rathenau Instituut therefore advocates the introduction of quality criteria to ensure that e-coaches have expertise, are reliable, respect the privacy and autonomy of their users, and act with integrity.

### RECOMMENDATIONS

**Introducing quality criteria is necessary to ensure that e-coaches provide reliable and sincere support.**

- 1. Professional seal of approval.** Consumer organisations and app developers should reach agreement on quality criteria for e-coaches. Consumers need information about what the e-coach does and on what information the e-coach comes to its advice.
- 2. Guarantee privacy.** The stricter privacy legislation that is on the horizon imposes more stringent requirements on product developers. Product developers and governments need to prepare now for those requirements and work diligently on protecting privacy.
- 3. Respect autonomy.** The e-coach influences the user in order to bring about a change in his behaviour. Providers of e-coaches should therefore be compelled to make clear what techniques of persuasion the device is using.
- 4. Government bears the burden of proof.** Government can only make the use of an e-coach mandatory if it first demonstrates that doing so is justified.
- 5. Transparent revenue models.** Users of e-coaches now deal with a network of parties, each of which has its own (commercial) interests. The user's interest are not always automatically the top priority. The Rathenau Instituut calls on regulatory bodies to investigate the revenue models used for e-coaching applications. Governments should also make it mandatory for providers to be transparent about their revenue model.

# The advent of the e-coach

**In its report *Sincere support*, the Rathenau Instituut draws attention to a widespread trend in which technology is being used to help us attain our personal goals: the advent of the e-coach.**

Digital technology is making behaviour, emotions, activities, and bodily functions quantifiable. But that is not all. Smart software is also allowing us to analyse all this data and discover new patterns in it. The new digital personal assistant – now appearing in the shape of a wearable or a smartphone app – offers us a steady stream of advice about every aspect of our lives, ranging from finances and relationships and interactions with others, to health, lifestyle, and energy consumption.

Digital coaches are a first step in the development towards omnipresent coaches that influence our behaviour. Ambient technology is becoming interconnected and smarter, subtler and more controlling. The Rathenau Instituut considers it important to start reflecting now on the social and political impact of e-coaching.

E-coaches are full of promises, from convenience and optimised behaviour to improving wellbeing and preventing illness. However, the quality of the e-coaches now coming onto the market differs considerably, and not all e-coaches can live up to their claims. The technology has limitations concerning all three elements of digital coaching – *measuring, monitoring, and motivating*. Sensors still find it difficult to measure human behaviour accurately. Not enough use is made of proven scientific methodology regarding behaviour modification. As a result, the user may receive incorrect or ineffective advice.

In human coaching, quality assurance is based on professional codes, accreditation, and seals of approval. These serve to guarantee that the coaching programme is provided by experts who are responsible and act with integrity, with the client's privacy protected.

These codes do not apply to the e-coach, and producers of e-coaches are not subject to professional confidentiality requirements. The lack of quality criteria for e-coaches, can lead to problems, particularly in the case of digital health coaches. Clarification is therefore needed – in the short term – regarding the quality of digital coaches: what is the purpose and the target group of the e-coach? What is the e-coach capable of? How does the device arrive at its recommendations? What is the evidence base for its advice?

The data collected by e-coaching devices – especially when combined – are sensitive, personal and highly detailed. They are therefore of interest to many parties. Data from coaching apps can be shared and sold to third parties. For users it is difficult to be aware of all data flows involved and protect themselves. Sloppy data collection, storage and processing and misuse of data can put users at risk and undermines trust of users. Privacy policies are lengthy and difficult to understand for users, and can be adjusted by e-coaching providers any time. Stronger (technical) privacy guarantees are essential to responsible e-coaching design. For example, encryption techniques ensure users that data is not accessible to the provider, but can only be decoded on the user's own device. In addition, transparency from e-coaching providers and data brokers about data collection, sharing and profiling is required.

## SUMMARY

**In *Sincere support*, the Rathenau Instituut describes the advent of the e-coach in various fields.**

- **Body management**

Most e-coaches focus on health and lifestyle. There is no scientific consensus, however, on what constitutes a healthy diet or lifestyle. How can the user know what advice he can trust?

- **Financial coaches**

Modern budgeting apps help users take control of what is spend. Providers of these apps can 'look over the user's shoulder'. It is not always clear what the revenue model is for the e-coach.

- **Sustainability**

E-coaches help the user to save energy. However, their use also serves other purposes, for example to understand customer behaviour. How can the customer know whether the aim of achieving sustainability is genuine, or whether the intention is actually to maximise profits?

- **Coaching for social interaction and stress reduction**

These applications are still in their infancy. One problem is the reliability of measurements of bodily functions and emotions. Reliable e-coaching in this field demands apps that are based on more than just sensors. When interpreting the advice of these e-coaches, the user needs to realise that they are not yet a mature product.



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### Colofon

This research brief is based on the publication *Sincere Support. The rise of the e-coach* by Linda Kool, Jelte Timmer and Rinie van Est. The Hague, Rathenau Instituut 2015. To find out more, go to [www.rathenau.nl](http://www.rathenau.nl) or contact Linda Kool, Jelte Timmer, Rinie van Est or Frans Brom: tel. +31(0)70 342 1542, l.kool@rathenau.nl, j.timmer@rathenau.nl, q.vanest@rathenau.nl or f.brom@rathenau.nl.