# Thermae 4.0

## Thermalism and digital technologies

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# The meaning of Thermae 4.0

Industry 4.0 is a new approach improving manufacturing organization with automation systems and IT applications.

We can have the same approach in thermalism: using the IT technologies for improving the SPA organization, cost/performance ratio and results of the treatments.

All that requires a **managerial approach**: we have to rethink the activities in terms of organization, because **technologies are useless if they are not well integrated into the organization**.

# Thermalism: Health and Tourism

The world of Thermalism is a mix of several interests. The Health & Wellness main business is more and more integrated with Tourism, that plays an important role in attracting new customers.

So we have to consider the activities of both sectors when planning a new organization model.

**HEALTH & WELLNESS ACTIVITIES**

**TOURISM ACTIVITIES**
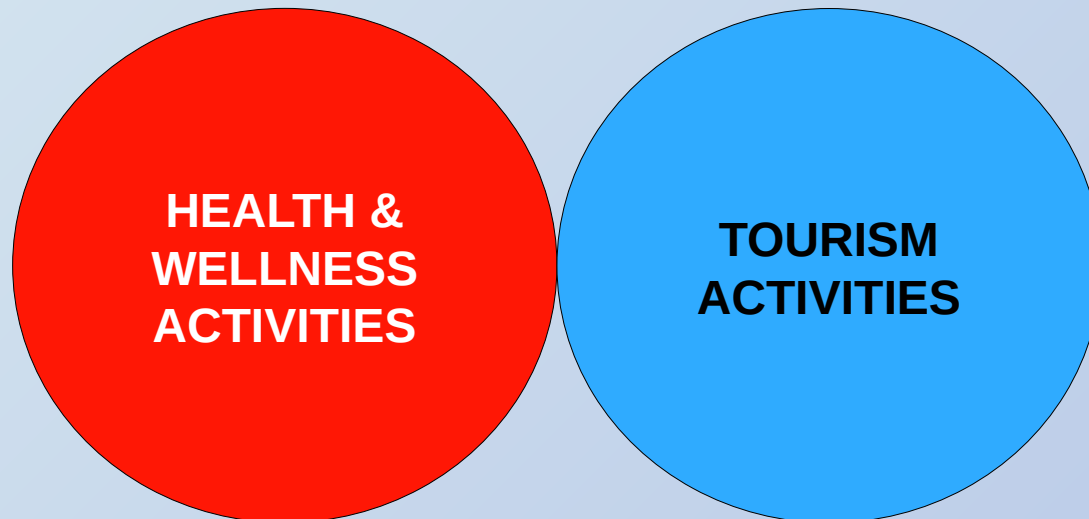
# Emerging technologies for healthcare

In a world that changes every day, the SPAs must follow the technological evolution to guarantee the best services.

The services related to **prevention** are the most interesting and suitable for investments, because they can attract a new range of customers.

In everyday life it is difficult to find the time for specific tests or for a complete check-up, while the peaceful SPA environment is much suitable for this purpose.

Developing prevention services can also have an important socio-economic impact: disease prevention, rather than disease treatment, is the best and cost-effective healthcare approach.

# Emerging technologies for healthcare

Every day there are news of new technologies, but our choices must be appropriate to the context.

Complex systems that require the presence of highly trained specialists are not an optimal investment for a SPA.

**Automatic analysis systems that can be managed by low profile personnel** are more interesting to reduce costs and give customers a good service.

This type of applications can integrate a number of IT technologies, such as new types of sensors or new data access and management systems.

But **artificial intelligence** is the most interesting emerging technology, because in the medium to long term it will have the greatest impact in this environment.

# Artificial Intelligence applications

AI is becoming an important healthcare technology, allowing early disease detection and quicker diagnosis validation. Let's mention two important examples of AI algorithms for detecting very common diseases:

- AI applied to **heart diseases** detects life-threatening problems at earlier and more treatable stages.

- AI **eyes control** can detect diabetic retinopathy avoiding blindness and identify other diseases (ARDA project).

But AI can also help to create more comprehensive treatment programmes, and manage patients' conditions more effectively.

The **MIT course** on **AI for healthcare** may be interesting for better understanding emerging medical applications.

# Thermalism and customers' services

Let's now talk about the SPAs activities related to Tourism. We can consider two topics: **management of internal services** and **promotional initiatives**.

Two technologies can be mentioned for internal services, both already in use, but expected to evolve in the future.

**Robot**

We are not yet thinking of "humanized" robots, but of automatic systems for repetitive tasks that can lead to significant savings in personnel costs.

Robots are already in use in hosting environments for cleaning and disinfecting, for carrying luggage, for cooking services and even for making cocktails.

# Thermalism and customers' services

**Chatbot and Virtual Assistants**

AI-based chatbots can give quick answers to customer questions regardless of staff availability: for example, answering questions asked by phone or internet.

The virtual assistant can do similar things, but can also interact with the environment (Internet of Things): something like Siri or Alexa, which can provide information, but also manage devices (lighting, air conditioning, radio and TV).

These technologies are constantly evolving: today they manage simple activities, but in the future they will be able to manage complex support interactions.

# Thermalism and Marketing

The Tourism sector is dominated by the web. So the managers of tourism-related facilities must know how to use web marketing and social marketing as strategic tools.

A strong presence in Facebook, and possibly YouTube and Instagram, is important to acquire new customers.

Mailing is important for maintaining contacts with loyal customers. It has the advantages to be unexpensive and very effective.

Managers must focus on social media but cannot forget the website as a key element for the corporate image. This is a very common problem.

**Are you able to check if your site is professional and therefore effective?**

# Marketing and website effectiveness

Website developers often use the lack of knowledge of customers to deceive them with beautiful graphics, which impress the customer, but do not interest the visitors.

It is important to have an excellent judgment from Google, because visitors come from it.

Google gives us a very simple tool to evaluate our sites: simply by inserting a link in **https://pagespeed.web.dev/** we obtain 4 scores defining the effectiveness of a websites.

**Performance** is the most important score, because a low performance means the site is losing visitors. Developers never propose to improve it: they prefer to deal with **SEO** because that requires low-level staff: but a high SEO slightly improves the visibility of the site.