ADAPT Next Generation Recommender
A Collaborative, Contextual, and Content-Based Recommender

- Resistant to extreme cold-start contexts.
- Exploits all the data that is available about users.
- Generates personalised recommendations for hotel booking.

**Industry Benefits**

| Does not require significant rating data | Generates personalised recommendations | Provides real-time and robust recommendations | Supports real-time update of the different models |

**Use Cases**

| Hotel Recommendation  
No need to have bookings for all users or all hotels | Recommendations for Users in cold start contexts - few (or no) data about users | Recommendations for Items in cold start contexts - few (or no) data about items | Any personalised item-user online recommendation context |

**Industry Challenge:**
How to overcome the extreme cold-start problem

- Data sparsity problem and the lack of personalisation in Collaborative Filtering approaches.
- Content-based approaches restrict the user to items similar to those already seen (over-specialization problem).
- Content-based approaches also don’t consider the alignment between users who have similar tastes.
- Current approaches ignore contextual information related to the user.
- In current approaches it is time and resources intensive to add new users or items.

**Our Solution:**
Next Generation Recommender
A real-time hybrid recommender that combines different techniques and exploits all the available information about users, such as:

- User’s preferences to personalise recommendations.
- Data about users who have the same taste to apply collaborative filtering techniques.
- Data associated with items to apply content-based techniques.
- Contextual information.

It overcomes the user and item cold start problems and overcomes the shortcomings of content based and collaboration filtering approaches. **Ready for deployment within Ryanair website.**

Prof. Séamus Lawless, Mostafa Bayomi, Dr. Annalina Caputo, Matthew Nicholson, Anirban Chakraborty

To learn more about innovative ADAPT technologies, contact: collaboration@adaptcentre.ie

The ADAPT Centre for Digital Content Technology is funded under the SFI Research Centres Programme (Grant 13/RC/2106) and is co-funded under the European Regional Development Fund.