Inter IIT Tech-Meet 11.0

Cognitive Garage-Easy Automation of Complex Decision Making

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Domain: *Personalised **Consumer Incentive Design** in **Digitally native** brands across the **consumer funnel***

Use Case: Personalising consumer incentives to increase customer **acquisition**, **retention**, and **loyalty**. Consumer incentives can include **reward points**, cashback, **store credits**, branded sway, gift cards, bonuses with free purchases, etc. Aiming at **digitally native brands** since they forge a data backed direct to customer model and lay special emphasis on personalization. (Examples: Lenskart, Nykaa, MamaEarth).

Complex Decision being automated:

Deciding **which incentive** to give to the consumer based on a number of personalized parameters:

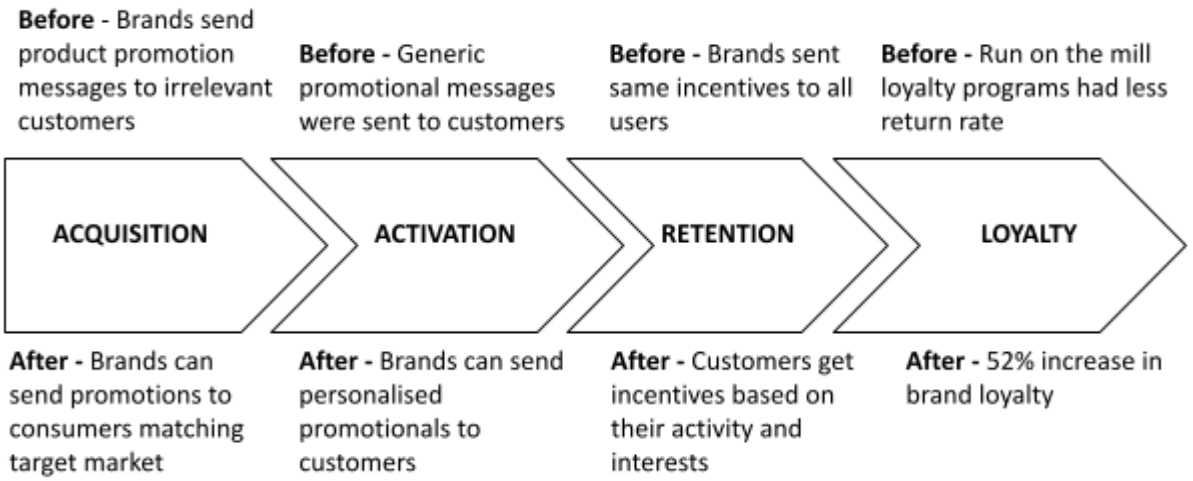
- **Company goals** (customer acquisition/retention/ increase revenue), **Consumer data** (to understand the demography, purchase history, and consumer behaviour), **Incentive parameters** (types of incentive and amount of incentive)

What makes this a complex decision and why is there a need for automation?

- Designing tailor-made customer-market incentives require a lot of manual **effort**, and **time**.
- A higher level of personalization is **nearly impossible** for marketing teams **to achieve manually**.
- By using a marketing strategy that **automatically offers truly personalized incentives**, each customer receives the offer **most likely to convince** them to make a purchase.

Benefits of automating

- **Personalization**: **71% of consumers expect** companies to deliver personalized interactions.
- **Revenue and Cost Cutting: 40% more revenue** while cutting down **marketing costs by 10-20%**.
- **Retention and Loyalty: 81% increase** in **annual recurring purchases** and a **53% increase** in brand loyalty were observed in brands prioritizing personalization.



Domain: Pharmaceutical Industry

Use Case: Implementing our decision-making automation platform in the ***lead identification phase of R&D of drug discovery***. This automation process is known as HTS analytics:

- The global high-throughput screening market size is projected to reach **USD 26.4 billion** by 2025 from **USD 15.3 billion** in 2020, at a CAGR of **11.5%** during the forecast period.
- The drug discovery segment accounted for the highest CAGR.
- The market in the **Asia Pacific**, on the other hand, is projected to grow with the highest CAGR of **8.6%** over the **forecast period.**

Complex Decisions being automated: Accurately forecast the drugability of various compounds to identify the lead for the formulation of drugs based on a number of parameters:

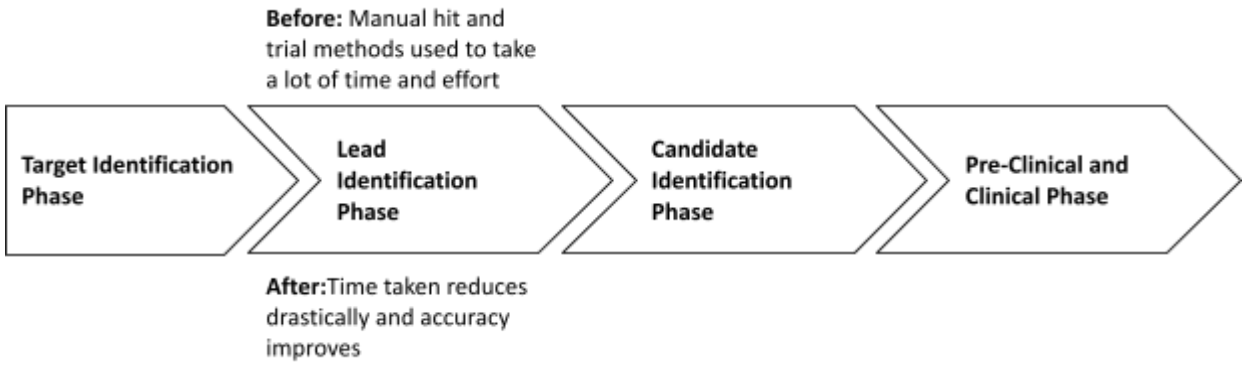
- Interaction with **target receptor**, **physicochemical properties** of the compound, **pharmacokinetics** (how the body interacts with administered substances), and **pharmacologic effect**.

What makes this a complex decision and why is there a need for automation?

It involves a lot of parameters as mentioned above to be analyzed and predicted**.** Pharmaceutical companies find it tough to manually complete this procedure, Data automates this complex decision-making process involved and drastically fastens the drug discovery process.

Need and Benefits of Automation: In the 1990s, a typical HTS campaign would screen around **10,000** compounds per year. With the introduction of automation and robotics, that number has increased to several million compounds per year.

- **Increased Developmental Cost** - As per Eroom's law, drug development costs double every **9 years**. Surprisingly less than 1/3rd, **31.8%**, of all pre-clinical studies, enter phase one of a clinical trial.
- **Expedited Drug Development** - takes about **10 years** to complete the drug development cycle which may cost somewhere around **USD 2 billion**. We can reduce expenditures and save time in this industry.
- **Recurrent Assay Generation** - Automated assays have a nearly **50%** higher hit rate than manual assays.



Domain: *Clinical nutritionist industry*

Use Case:

The global clinical nutritionist industry is valued at **$ 11.7 Billion** and has a CAGR of 8.8 % for the next 5 years. Given the **dependence** of *diet planning* on the input parameters of the consumers, this decision of scoring and prioritising blocks of diet plans to create *a customized and consolidated diet plan* will be automated creating more **dynamic structures.**

How this solves a complex problem: Decide what kind of dietary plan is best suited to meet the consumer's lifestyle and health requirements based on a number of parameters:

- **Linearly structured primary parameters**, majorly concerned with **medical condition**
- **Supposedly irrelevant externalities** that affect the decision. For instance, consumer demography, and geographical and availability constraints.

What makes this a complex decision and why is there a need for automation?

There are a number of parameters involved to be considered while devising any dietary plan personalized to meet any individual's health and lifestyle requirements. It is not possible for a human to manually access and consider all these parameters and devise such a plan.

Need and Benefits of automation:

- **Minimizing time and optimizing accuracy:** AI automation would free up **70%** of the time used for tasks and routine management.
- **Cost Efficiency:** Automation would reduce overhead costs by more than **10%**.
- **Dynamic Personalisation of variables:** **88%** of the population requires personalization as a necessary factor for the nutritional plans in terms of changing variables.