

Watson Studio — Decision Optimization

Collect. Optimize. Transform your business.

—

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With predictive analytics alone, you're only getting half the story



Predictive analytics

- Tells you what is likely to happen



• Prescriptive analytics

- Tells you what to do about it

Solve for what to do next

with machine learning and prescriptive and predictive analytics

IBM Decision Optimization for Watson Studio software evaluates millions of possibilities to find the one with the greatest probability of success.

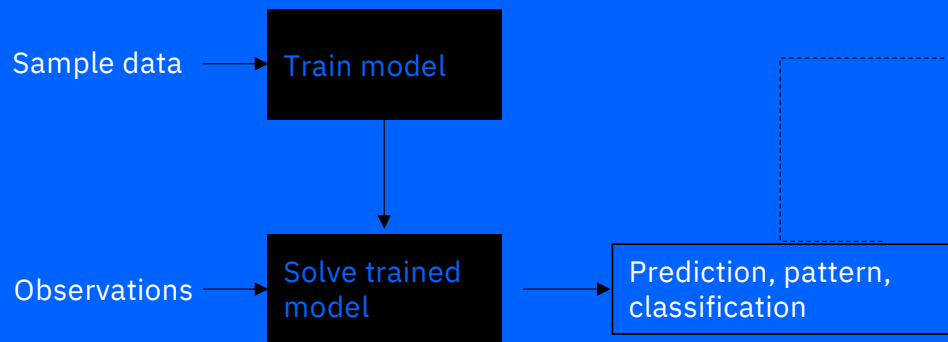


Machine learning + optimization = actionable insights



Predictive analytics

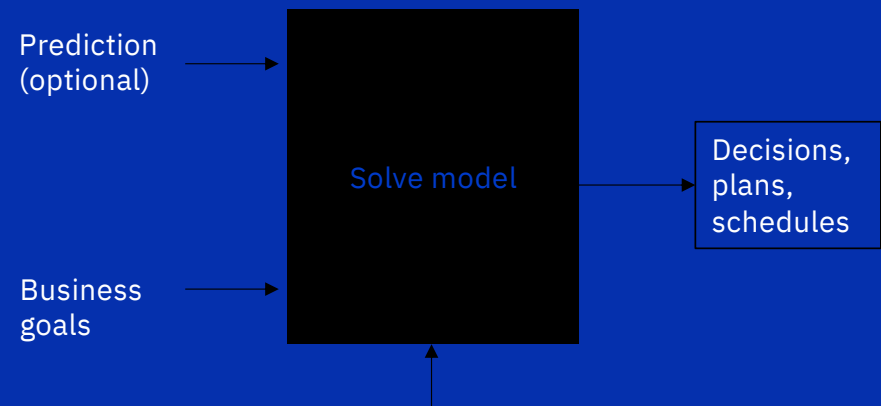
- Basic (supervised): You **know the answer**, and you **train the machine how to find it**.
- Advanced: Unsupervised, reinforcement, deep learning



Prescriptive analytics

- You **don't know the answer**, and you **provide the machine the logic on what is a good and a bad solution**.
- Advanced: Robust, stochastic, etc.

Unknowns (decision variables)



Prescribe action by optimizing decisions

on discovery and predictions for modern apps

Discover and predict with **SPSS Modeler** and **Watson Studio Premium**

Discovery

- Trends & patterns
- Correlations
- Insight for hypotheses

Prediction

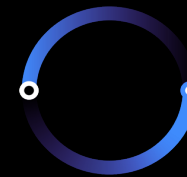
- Segmentation and attrition
- Contact center optimization
- Predictive / preventive maintenance
- Risk / governance / fraud

To drive action and business results in a prescriptive way

Optimize decisions with **Decision Optimization**

Decision Optimization

- Scheduling
- Demand and supply matching
- Allocation
- Logistics
- Pricing and category management
- Scenario planning

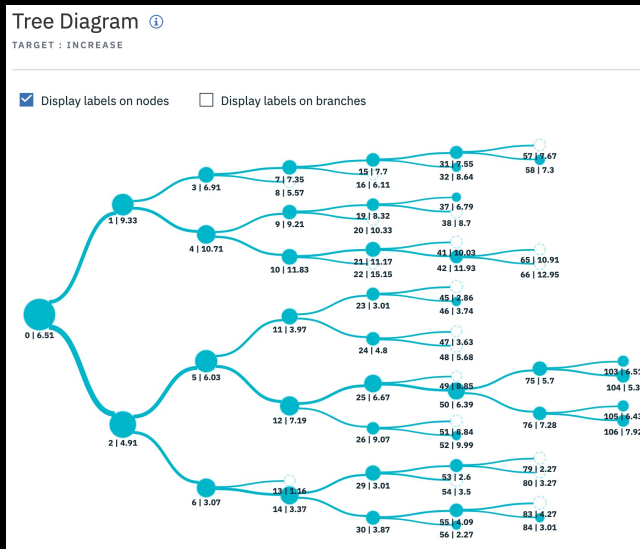


Continuous AI
model governance



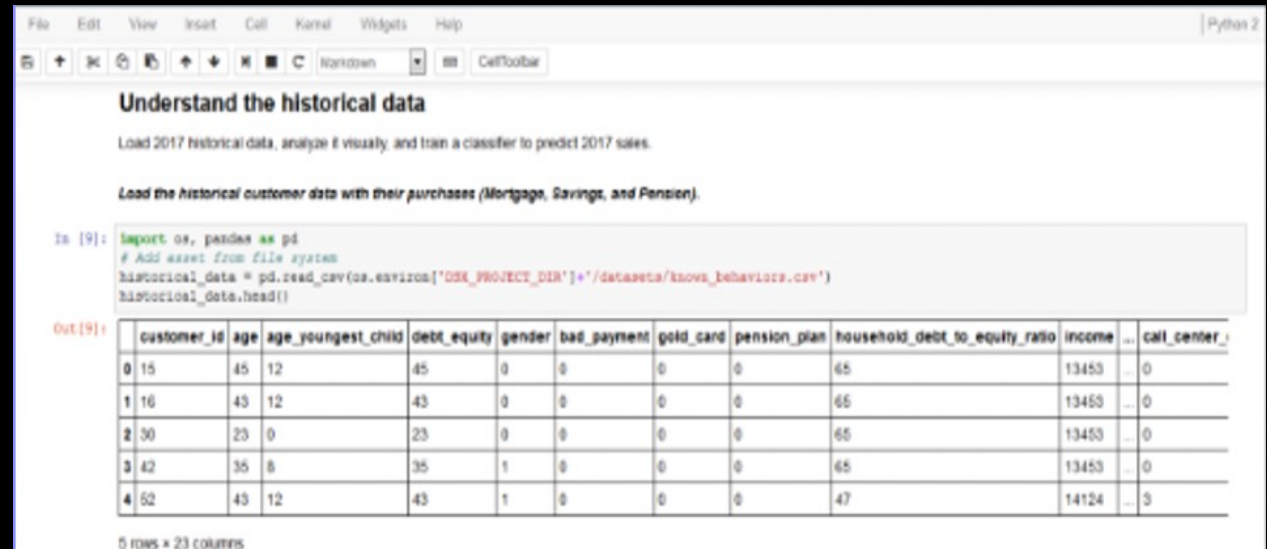
Power of the platform

Example 3: Predictive to prescriptive



1. Open SPSS Modeler

Use SPSS Modeler to prep data and generate predictive models, then export into projects. Easily share that project with Decision Optimization users in your organization.



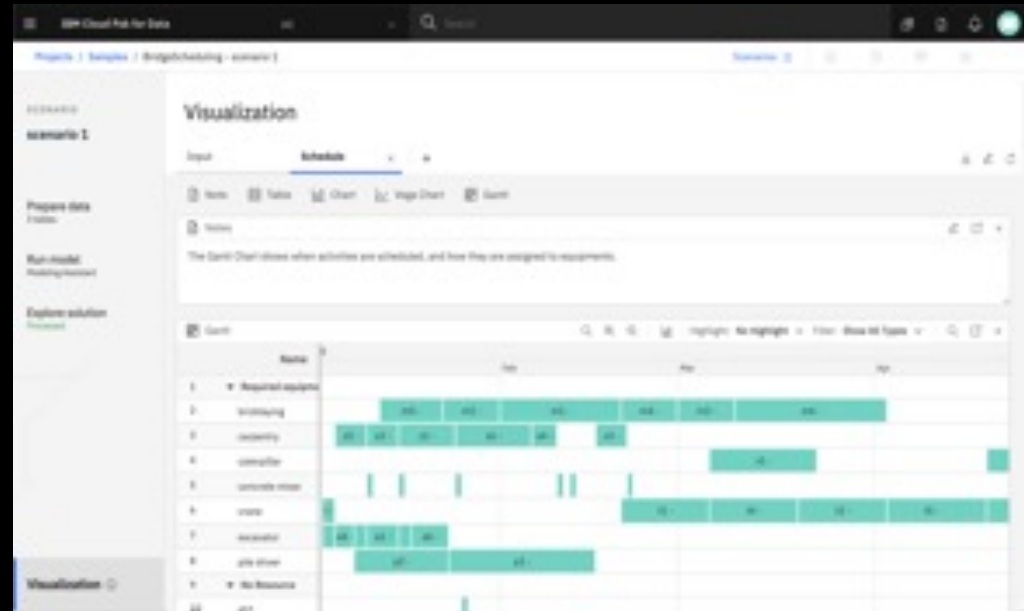
2. Use AutoAI to predict

Using Decision Optimization tools in Cloud Pak for Data, open the SPSS Modeler predicted results and pass in the predicted variable from SPSS Modeler to a data asset. This can be used as a constraint in the optimization model.

SPSS Modeler users can collaborate with Decision Optimization experts to turn analysis into action by passing in the predicted variable.

Example 4: No-coding model generation with NLP

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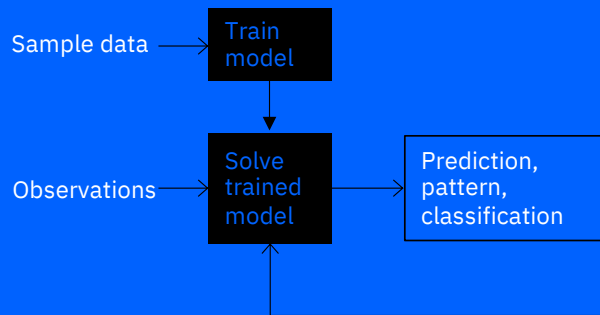
Power of the platform

Example 5: No-coding model generation with NLP



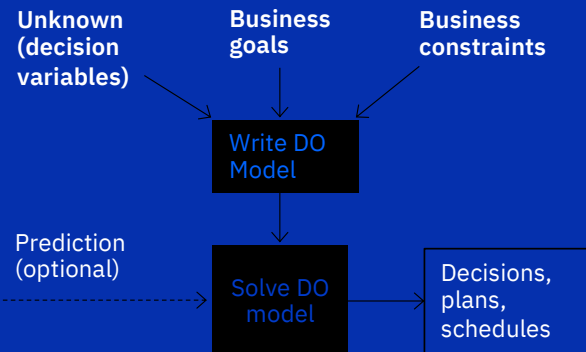
Predictive analytics

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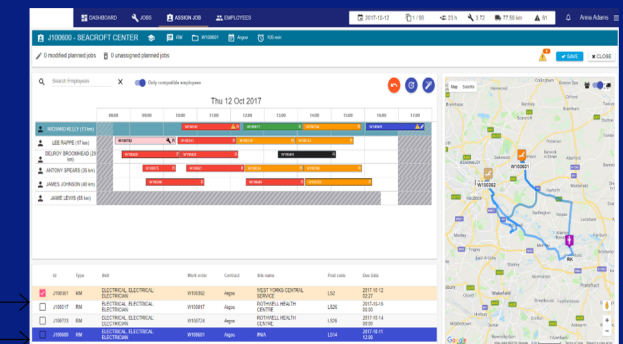
Prescriptive analytics

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LOB application

- Custom LOB application
- Decision Optimization Center (DOC)
- Planning Analytics



When to use prescriptive analytics (IBM Decision Optimization)

IBM Decision Optimization

When you want to manage efficiency,
utilization and allocation of limited resources

Resources	Choices to make
Capital	Invest, allocate
People	Hire, assign, schedule
Equipment	Acquire, schedule, locate
Facilities	Locate, size, schedule, maintain
Vehicles	Acquire, route, schedule, deliver, maintain
Materials and products	Acquire, allocate, produce, deliver, maintain

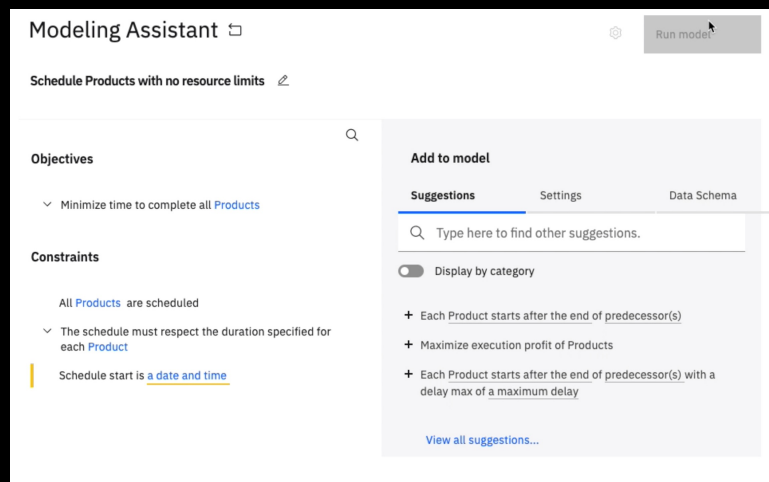
Delivering massive return on investment

Chilean forestry companies (two examples)	Timber harvesting	\$20M/year + 30% fewer trucks
UPS		
South African National Defence Forces	Force and equipment planning	\$1.1B/year
Motorola		
Samsung Electronics	Semiconductor manufacturing	50% reduction in cycle times
SNCF (French rail network)		
Continental Airlines	Crew rescheduling	\$40M/year
AT&T		
Grantham, Mayo, Van Otterloo & Co. (GMO)	Portfolio optimization	\$4M/year

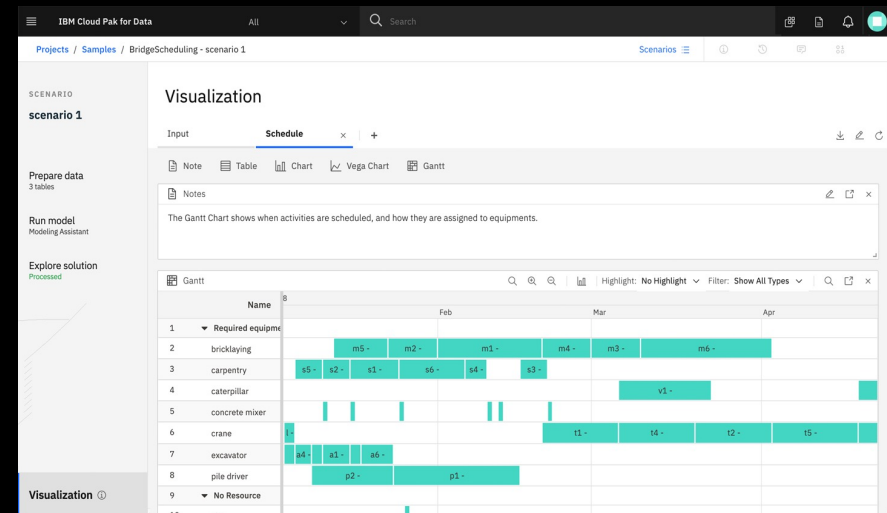
features

Not found in standalone

Found only in Watson Studio Premium
on Cloud Pak for Data



Use natural language to build your
optimization model with no coding.



Model builder is a modern and intuitive development
experience that includes visualization and scenario
management.

Why Watson Studio for Cloud Pak for Data?

Increase your returns on AI investment by applying decision optimization to your discovery and prediction



- Automate AI life cycle management
- *Speed data science projects and manage AI success end-to-end*



- Empower data and analytics experts
- *Activate and reskill developers and analytic experts to be AI ready*



- Predict and optimize business outcomes
- *Activate and reskill developers and analytic experts to be AI ready*



- Bring analytics closer to data
- *Take advantage of your existing Hadoop/big data securely*

Watson Studio = SPSS Modeler + Decision Optimization + Hadoop Execution Engine

IBM