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How to Streamline Data Governance Across the Ecosystem

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Global Practice Manager, IMPT

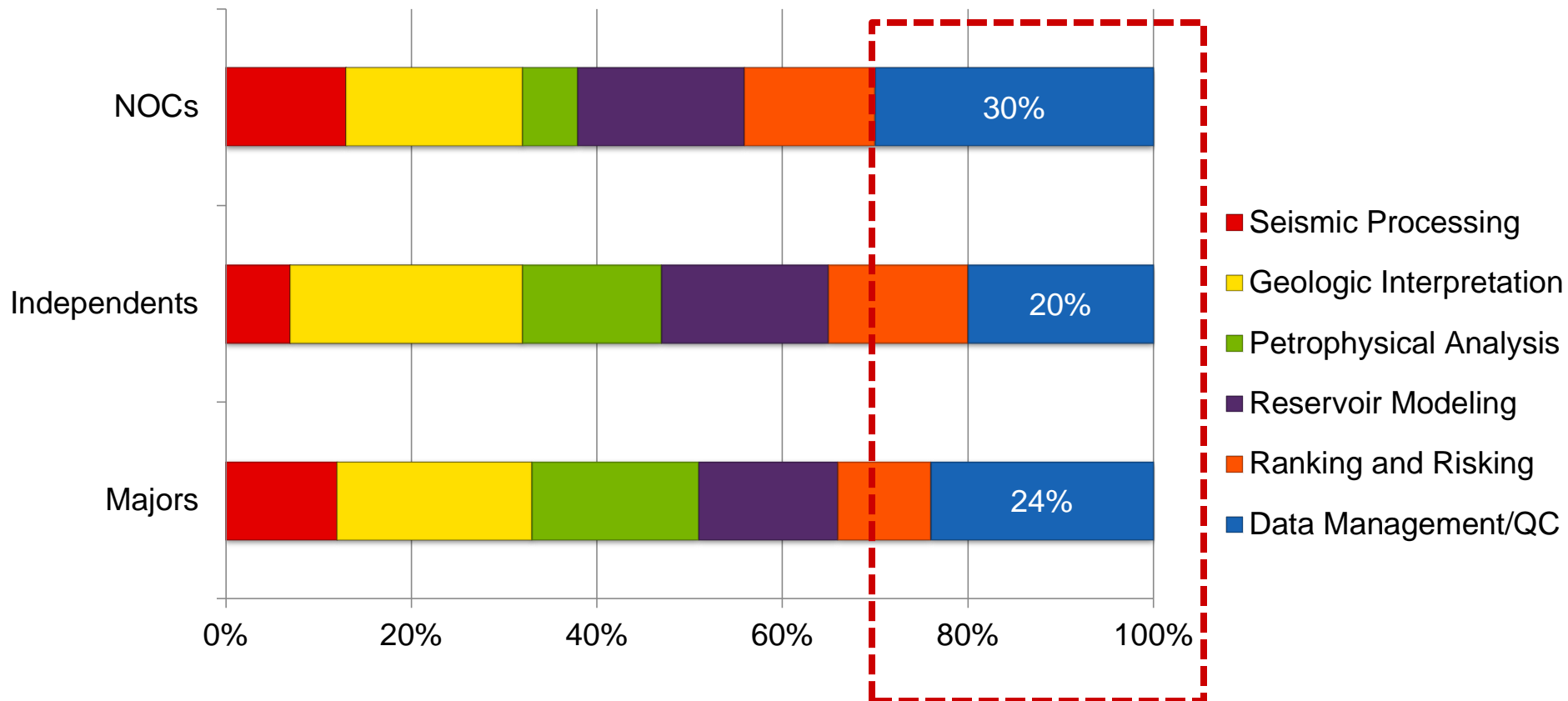Sr. Product Manager, IMPT

Landmark

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Industry Challenges

Reservoir complexity is increasing

Developing unconventional plays require a different way of working

Data volumes and types are increasing
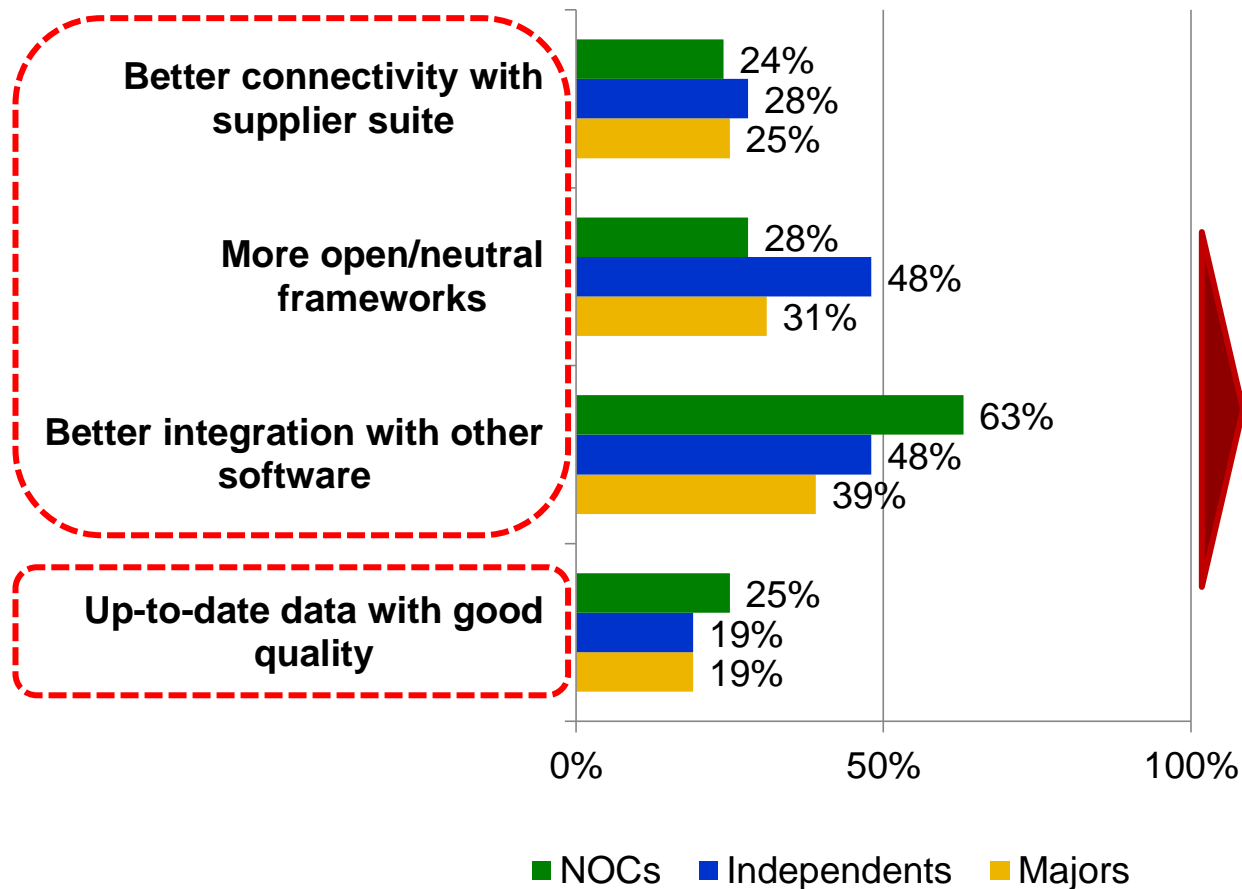
Diversity of technology creates silos and data duplication

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Time Spent on Data Management

TIME SPENT BY E&P COMPANIES ON TASKS[1]

Legend:
- Seismic Processing
- Geologic Interpretation
- Petrophysical Analysis
- Reservoir Modeling
- Ranking and Risking
- Data Management/QC

NOCs: 30%
Independents: 20%
Majors: 24%

Source: (1) 2013 Welling Survey and Report on E&P Software

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Areas for Improvement

EXPECTED CUSTOMER OUTCOMES

Area	NOCs	Independents	Majors
Better connectivity with supplier suite	24%	28%	25%
More open/neutral frameworks	28%	48%	31%
Better integration with other software	63%	48%	39%
Up-to-date data with good quality	25%	19%	19%

Scale: 0% — 50% — 100%

Legend: ■ NOCs ■ Independents ■ Majors

Open Platform with Seamless Integration

High Quality Data

Source: (1) 2013 Welling Survey and Report on E&P Software

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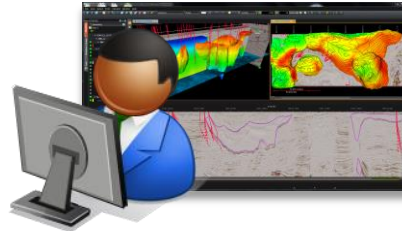# DecisionSpace Integration Server

Geoscientists

Admin, Data Mgr.

Geoscientists and Engineers

Managers

Integration Foundation

DecisionSpace Integration Server

Data Server | Connectors | Search | BPM | Web Framework

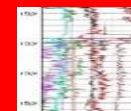**DecisionSpace Analytics & Real Time**

DecisionSpace Data Quality

Information Foundation

Landmark Databases | 3rd Party Databases | Semi Structured data | Unstructured Data | Real-time

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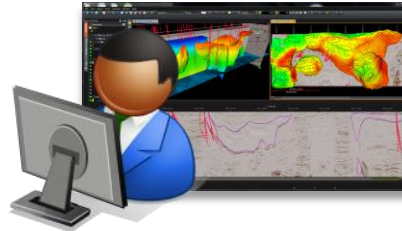
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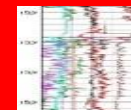
DecisionSpace Data Quality

Information Foundation

Landmark Databases   3rd Party Databases   Semi Structured data   Unstructured Data   Real-time
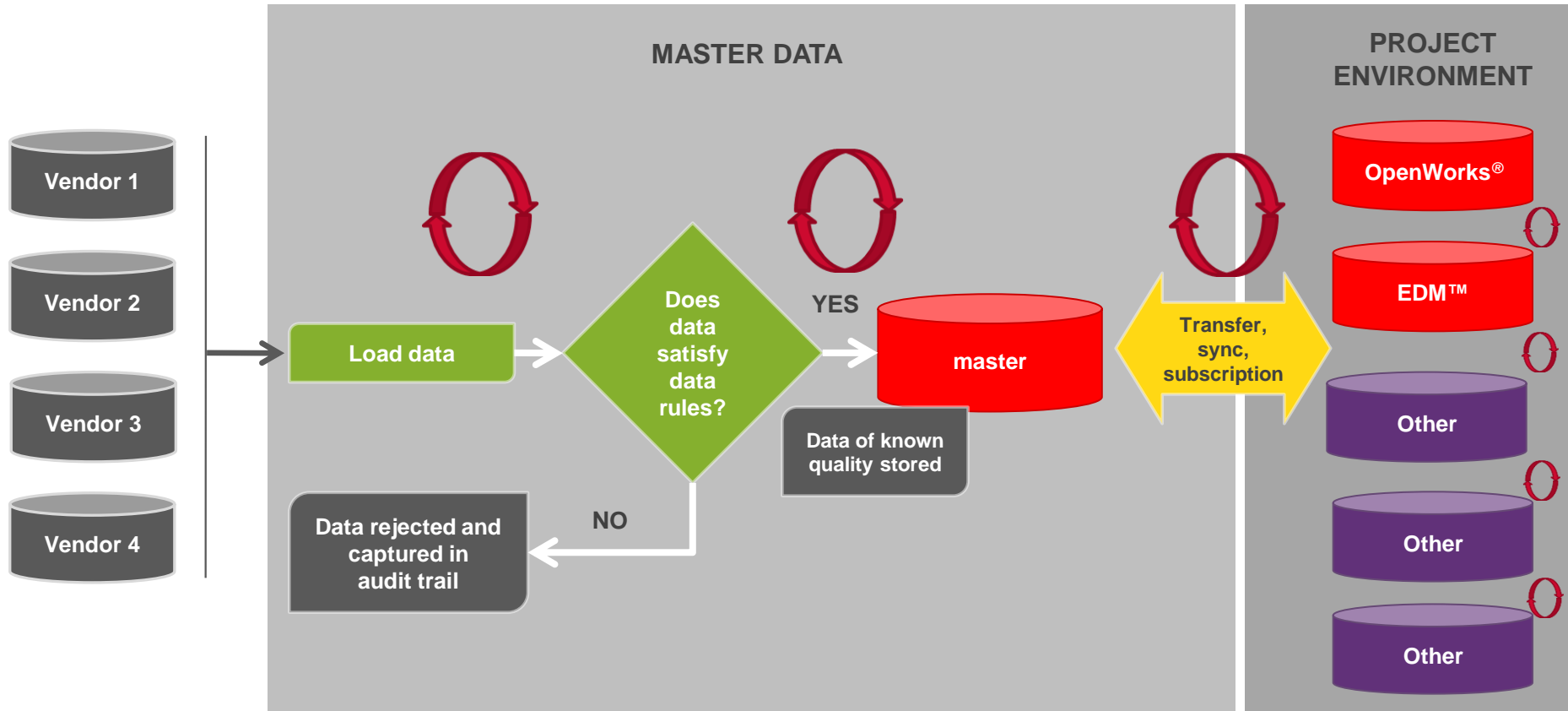
Data Quality

Data Quality is not…

- A one size fits all solution
- A one time event

Data Quality is…

- unique to each organization
- a continuous process

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Data Workflow

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Types of Data Quality Rules

| Completeness
- Null values
- Placeholder values
- Missing child records

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Types of Data Quality Rules

Completeness

Consistency

- Inconsistent values

- Bad computed values

- Differences among matched sources

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Types of Data Quality Rules

Completeness

Consistency

Conformity

- Numbers within range
- Dates within range
- Expected formats

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Types of Data Quality Rules

Completeness

Consistency

Conformity

Duplication

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Types of Data Quality Rules

Completeness

Consistency

Conformity

Duplication

Integrity

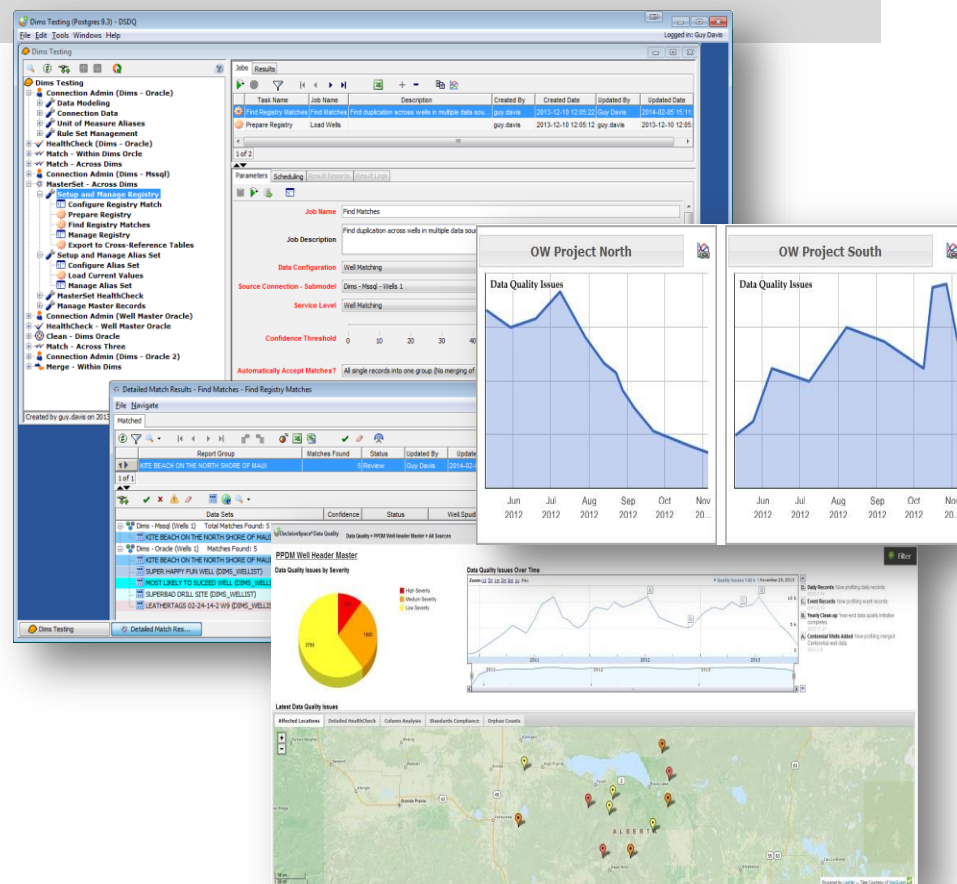- Orphan child records

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Automation is key

Perpetual monitoring and continuous improvement of data

Business best practices ensures efficient and effective data management

Reusable & repeatable processes

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What is DecisionSpace® Data Quality?

Landmark's DecisionSpace Data Quality is a suite of data quality tools designed to evaluate, correlate, correct, and monitor data across the enterprise.

- **Quickly assess** the health of their data

- **Automate & schedule** data quality jobs for perpetual monitoring and continuous data improvement

- Remove **data bottlenecks** that hinder a projects progress

- **Communicate** data quality improvements over time to management and end users

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DecisionSpace® Data Quality

- Leverages the power of DecisionSpace platform

- Delivers over 5,600+ preconfigured data quality queries (canned QC rules)

- Preconfigured data quality-over-time web dashboard with metrics and KPIs

- Mobile support of the web dashboard

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Data Quality Project

▍Company did not know the quality of their data and users lacked confidence in the data they used in their applications

▍Transferring data and ensuring the data sources were aligned was primarily a manual process

▍Database performance issues and user application crashes were reported which required a significant portion of the data managers' time to address

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The Results

▌ Improving database and application performance by identifying and deleting orphan records in data sources.

- Database sizes were reduced by as much as 20% due to cleaning up of orphan records
- Eliminating orphan records also reduced user application crashes

▌ Matching and merging data across different sources reduced data duplication and ensured data consistency across databases

▌ Communicating results of the improved data quality to end users made them more confident when using it in the applications.

▌ Dashboards provided metrics to upper management

- Value of the initial cleanup process
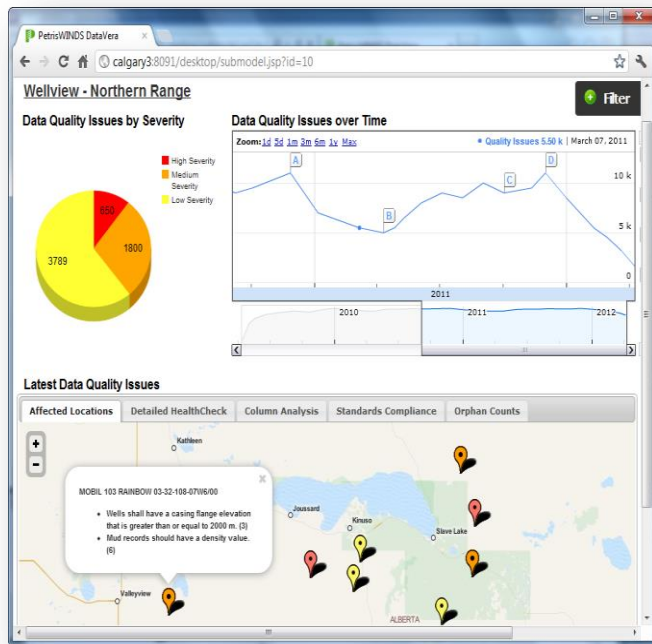- On-going data management

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In Summary…

▌ Having best practices in place for data governance and data QC are key in decreasing decision cycle time

▌ Data Quality should be present at all stages of the data lifecycle

▌ Automation reduces the time it takes to monitor and correct common problem

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Demonstration

Questions and Next Steps

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Thank you

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