



Checklist for **State-of-the-Art** Travel Analytics Today

1. What is state-of-the-art in travel analytics today ?

Today, successful enterprise software vendors focused on analytics emphasize the following:

- data access
- trust & data engineering
- data mining
- complete solution
- speed & end-to-end processing

Data Access:

Corporate travel is facing a major technical discontinuity – NDC is replacing the 40-year-old EDIFACT standard **for airfares**. Analytics software must now seamlessly incorporate more and more air, hotel, and other travel data providers.

In addition, the need for new **DEI & ESG metrics** means additional data sources are being accessed. New regulations by the European Union (CSRD) now require Scope 3 CO2 emissions to be reported in 2024; reports due in 2025 will eliminate **green-washing**. The SEC will be issuing their equivalent rules, expected later this year. Analytics platforms must be able to incorporate these ever-expanding data sources easily.

Complete Solution:

Today's Analytics packages are expected to do much more than in the past. Analytics is all about providing decision support and thus providing travel managers with the most complete and diagnostic data and metrics to solve specific corporate priorities.

A complete analytics solution must provide for the following:

- **data intake:** - seamless entrée of data as it becomes available
- **data engineering:** - with data quality assurance, data curation & reconciliation
- **engineered features:** - generate key ratios & statistics so useful in AI modeling
- **one-source of truth:** - one data store where raw data and model results reside
- **dashboards:** - configurable in less than 5 minutes for maximum impact

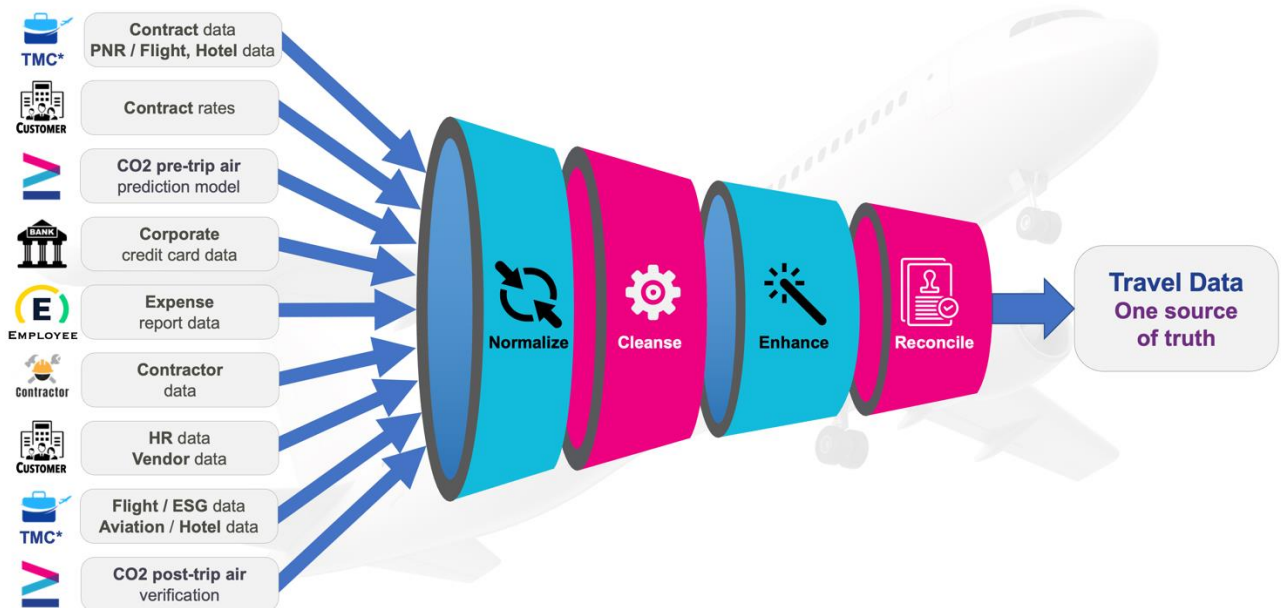
Analytics software today must report on "raw data" and the output of both business intelligence ("BI") and artificial intelligence ("AI") models. The raw data, e.g., data from your core travel systems, provides context for the metrics derived from the BI and AI models.

Trust & Data Engineering:

Travel analytics must overcome the "**trust**" problem with travel data. Is your travel data fully reconciled – corporate **credit card** data, **TMC** data, **expense** reporting system data, and, increasingly, data from direct-to-vendor systems (e.g., **NDC**)? These core datasets reside outside the enterprise, making travel data reconciliation necessary. It is tough to use external data if it doesn't add up!

If data resides outside your organization, you must **quality-assure** the data to ensure it meets the internal standards for your data and its use in analytics. It also means that the data must be curated.

For instance, systems in Europe and the US use different date formats, which must be curated and reconciled, and changed to the format the travel manager uses internally.



Underpinning trust in enterprise data is the creation of **"one source of truth."** This means gathering all of your raw data and model results and storing them in one data store and using this data store for all of the reporting for all travel data users.

The golden rule in enterprise is if the same data is stored in more than one place, it soon gets out of sync, and users, therefore, are looking at different results as their datasets are not the same.

Ultimately, your data engineering must be done by experts in travel industry issues and business practices.

Travel expertise is usually best found with vendors who specialize in travel to a great extent. Visualization of data does not provide insights unless the data underpinning the visual treatment is properly quality assured, curated, and reconciled.

Speed & End-to-end Processing:

The ideal data processing speed for your analytics is **near-real-time** processing. Business is simply operating at speeds unheard of a few years ago. A basic example would be dynamic pricing.



Airlines, hotels, and other suppliers are moving to dynamic pricing, eliminating static and regular price changes. A good example today is **NDC content**, where airlines bring a whole new level of dynamic changes to airfares.

Analytics is all about decision support, e.g., helping managers and staff make the best possible decisions. Good decisions require the best possible data, but it must be timely and arrive when needed, not a day late, etc.

Travel analytics are often provided weeks after the fact in terms of bookings, trip costs, etc.

Providing near-real-time analytics requires **end-to-end processing**. Modern analytics platforms turn all data in for processing into streaming data for data quality assurance, curation, and reconciliation purposes.

In addition, travel managers now expect AI modeling results to be included in their data metrics, so **engineered features** must be generated on the fly as raw data changes. AI uses engineered features extensively.

A typical engineered feature in travel would be calculating the average trip cost for the employee's last six trips to be used in an AI model predicting trip costs after a flight is booked. Every time an employee finishes a trip, this average must be recalculated. Engineered features are often among an AI model's most "**predictive**" features.

In creating **one source of truth** with this data, you need to have a reporting capability built in. Transaction processing creates this data store. But reporting is an entirely different problem.

Data reporting is very compute intense, so good reporting systems are separated from the transaction datastore using replication services in the database management software.

Reporting and analytics processing must be fast, and it must be configurable.

Every user has preferences regarding what visualizations they like, and these preferences must be enabled in **quick-to-configure dashboards**.

Data Mining:

To get the best travel analytics results, we need to be able to drill down your fully reconciled data – top-down – from the overall company level down to subsidiaries, divisions, geographies, working groups, all the way down to the individual employee and their individual trips and travel expenses.

This level of data mining is essential, so your analytics vendor needs access to HR data which tells the vendor who works for who, in other words, the organization chart.



2. Getting 10X returns on your investment in travel analytics ?

Return on your investment in travel analytics starts with trust in your data. Does it add up? Is it consistent & correct? Can we use this data with the same confidence as our financial data? Calculating ROI purposes is tracking and correcting for leakage from:

- **contract leakage:** - GDS / TMC charging your contracted rates?
- **card leakage:** - personal card use lowering rebates?
- **program leakage:** - tracking the use of non-program sources with different rates
- **NDC** - as new data providers arise, no changes to systems are needed
- **negotiations:** - near-real-time data for all transactions with a vendor
- **early warnings:** - trusted data providing guidance – changes in the program
- **new requirements:** - the cost of providing DEI and other ESG metrics, including CO2 emissions, can be seamlessly introduced, negating the cost and maintenance of multiple systems.

The table below outlines the savings for a typical travel program and expenditure pattern:

ROI Using Travel Analytics			Travel spend	Impact	Save %	Savings	
			\$ 50,000,000	5,000 travelers		\$ 50,000,000	
		Travel %		Current usage	Increase usage		
Cards	Rebates		\$ 50,000,000	75%	30%	1.50%	\$ 56,250
				Leakage	Decrease		
Air	Leakage	35%	\$ 17,500,000	25.00%	35%	2.50%	114,844
	Advance purchase	35%	17,500,000	40.00%	20%	3.00%	63,000
	Contract negotiation	35%	17,500,000	NA	NA	0.75%	131,250
							\$ 309,094
Hotel	Preferred	25%	12,500,000	Non-preferred			
				50%		5.00%	312,500
Hotel	Leakage	25%	12,500,000	Leakage			
				50%		5.00%	312,500
							625,000
Meals	& Entertainment	30%	15,000,000			2.50%	375,000
Ground	& Car rentals	5%	2,500,000			3.00%	75,000
Misc.	& Ancillary	5%	2,500,000			1.50%	37,500
							\$ 487,500
Staff	FTEs managing travel program, corporate cards, expense reporting & ESG		Headcount	Cost	Total		
			3.0	\$125k	375k	10%	\$ 37,500
Total savings:						3.03%	\$ 1,515,344



3. I have great returns, but how do I use the information ?

We now have one source of truth for all our travel-related data and the right timing for getting our analytics and metrics across both BI and AI, so how do we use this information?

The first priority is meeting our travel program objectives – financial, duty of care, DEI and ESG priorities, etc. The financial metrics we must track are mentioned above, including how we can use better data to negotiate contracts with our key vendors. Having in-depth program leakage data across all booking sources allows for a precise understanding of the volume of business we do with each vendor and where.

Data mining is crucial in managing a travel program using advanced analytics. With one source of truth, we can now move up and down the organization from the corporate level down to an employee's spending and travel details. Everyone in the organization directly addresses travel spending with accurate and timely data. This data can now be reconciled appropriately to efficiently compute accruals for month-end and quarter-end travel spending and commitments.

But using good travel data is more than just tackling the travel program priorities. CFOs have different metrics they look at, HR as well, and now we can configure dashboards in less than five minutes for their use – highlighting exactly what they want to see to help manage the organization.

We now have a one-stop shopping experience for collecting and disseminating our required DEI and ESG metrics, including CO2 emissions when booking and subsequent post-trip verification. CO2 at booking will enable better decisions in terms of our environment. Post-trip verification will allow for a precise understanding of exactly how much carbon we emit in our corporate travel program.

The ultimate goal of a world-class travel analytics software platform is to eliminate the use of Excel in preparing reports such that a travel manager spends less time preparing reports and more time helping their organization reach its objectives.