

코그니티브 비즈니스에 활용되는 데이터 사이언스 전략

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A PoV on Data in the Telecom
industry

Data and AI Forum by IBM

IBM

빅데이터 플랫폼 활용을 통해 비용절감과 매출증대 및 빅데이터 서비스/플랫폼 제공을 통해 신규 매출 창출

Biz Value, Objective, Use Cases

Biz Value

주요 활용 목적 및 영역

고객

빅데이터 플랫폼 활용

비용 ↓

매출 ↑

운영 효율화

- Telco Value Chain 상의 프로세스 운영 비용 절감

고객관계 강화

- 서비스 차별화 및 마케팅 효과성 강화를 통한 고객경험 제고

신규수익 창출

- 외부의 다양한 고객과 시장에서 창출되는 신규 매출
- 글로벌 통신사 대상의 플랫폼 기반 서비스 (SI, Consulting, Managed Service) 매출

NW 운영

서비스 지원

고객 서비스

마케팅

광고타겟 & 인사이트

빅데이터¹⁾ 클라우드

빅데이터 플랫폼 Biz

Telco 자사

- NW Operation Center
- New Biz (IoT, Video etc)
- Call Center
- Marketing Dept.

광고플랫폼업체

AOL 등 AdTech 파트너사 (Ad NW에서 타겟광고 실행)

B2C 기업

나이키, 페이스북 등 서비스 가입형 고객사

글로벌 통신사²⁾

Vodafone, DT, Telstra, NTT Docomo, Bell 등

1) SKT Data Hub, KT BigSight, Verizon MMI (Mobile Marketing Intelligence) 등 데이터 유통 포털

2) SKT, Verizon 등 선진 통신사는 자회사를 통해 자사 플랫폼을 판매 중 | Forum by IBM

Big Data Objectives and Use Cases

Biz Value, Objective, Use Cases

Revenue Growth

Customer Experience

Cost Optimization

New Revenue Streams

핵심 분석 주제

Customer Insight

- DB마케팅 정교화
- 가구정보 확보
- 고객 Life Cycle
- 맞춤 상품/제안

Network Insight

- 고객단위 품질 관리 (유무선CEM)
- 유선 NW 운영 효율

Care Transformation

- 상담업무 효율화
- 고객 문의/불만 예측
- 옴니채널 고객경험
- 해지 방어 (홈/모바일/기업)
- 인입콜 감축
- 이상영업추적관리

Service Differentiation

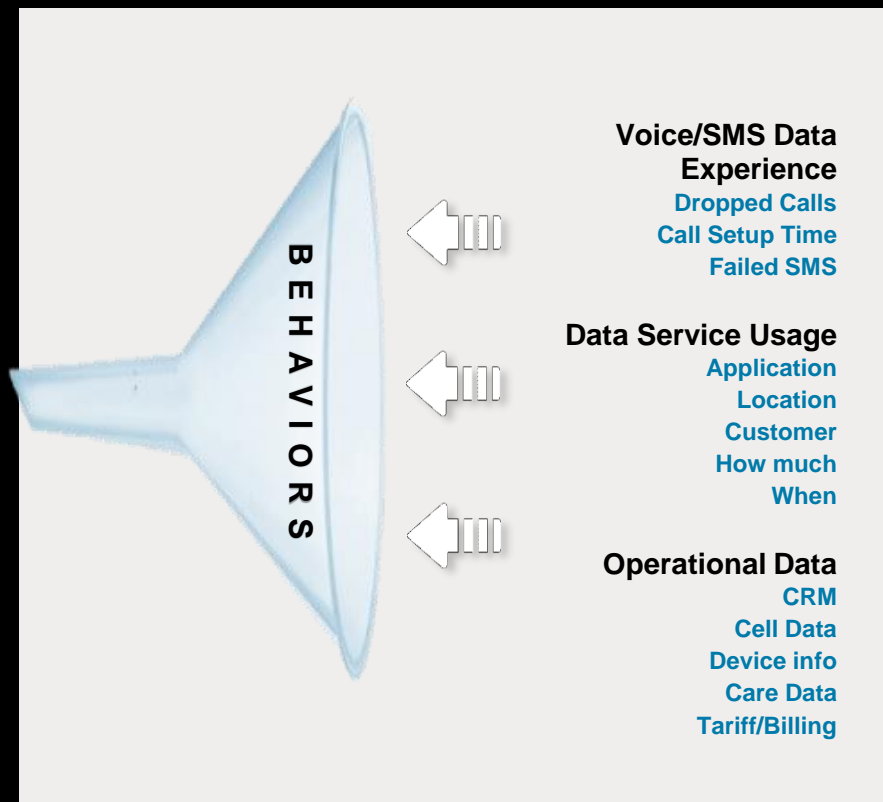
- 비디오/IPTV 추천
- 전자결제 차별화 (고객사 리포트)
- IoT 부가가치 발굴 (전기사용량 예측)
- 기업서비스 차별화 (결제정보기반 마케팅 인사이트 지원)

Data Monetization

- Insight 제공 서비스 (IPTV 시청률, 신용모델)
- Target 마케팅 대행 (홈쇼핑 DM 등)
- 빅데이터 협력/제휴망 (금융, 유통, 공공 등)

통신산업의 (고객)데이터 분석 주제

Fundamental Customer Insights



6가지 기본적인 고객이해역량

Fundamental Customer Insights

6 Basic Insight Capabilities

Location Insights	Customer Insights	Experience Insights	Social Behavioral Insights	Customer Preference Insights	Behavior Prediction Insights
12+ Model	5+ Model	5+ Model	3+ Model	6+ Model	5+ Model
<ul style="list-style-type: none"> • Real Time Location (5) • Historical Location (5) • Working Location • Living Location 	<ul style="list-style-type: none"> • Identity • Value Contribution • Crucial Moment • Source and Destination • User Auditing 	<ul style="list-style-type: none"> • Customer Satisfaction • Network Experience • Service Experience • Product Experience • Pricing Experience 	<ul style="list-style-type: none"> • Social Index • Number Impact Index • Customer Relationship Recognition 	<ul style="list-style-type: none"> • Device Preference Index • Video Preference Index • Reading Preference Index • Channel Preference Index • APP Preference Index • Product Concern Index 	<ul style="list-style-type: none"> • Device Replacement Prediction • Device Recommendation Index • Package Recommendation Index • Broadband Recommendation Index • Customer Churn Prediction

통신고객이해 - 상세 프로파일링의 구조(Big Table)

Fundamental Customer Insights

Objective Statistical Features (Quantitative Analysis)

Service Analysis Features (Rule)

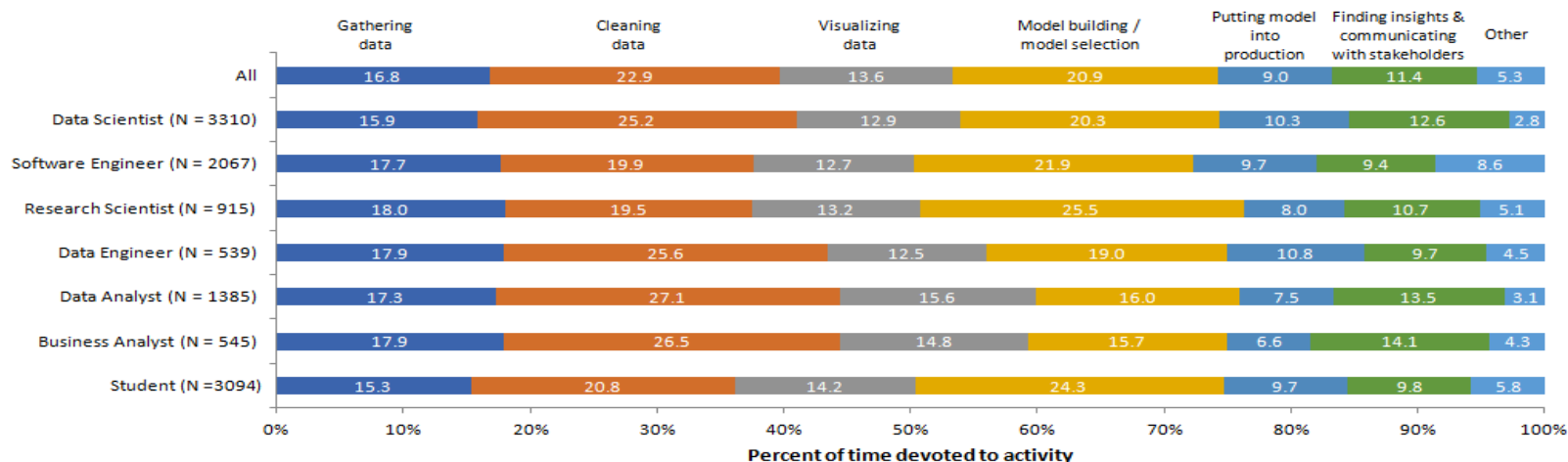
Service Analysis Features (Analysis Model)

Communication Features	Basic Internet Features	Location & Time Track Features	Behavior Features	Multi-dimensional & Composite Features	Vertical Industry Behaviors & Composite Features	Preference Tags	Vertical Industry Preference Tags	Derivative Tags
1000+	2000+	100+	100+	5000+		2000+		
Individual Attributes	Content	Individual Time & Location Track Tag	Telecom Field Behavior Tag	Telecom Domain Composite Tag	Vehicle Behavior & Composite Tag	Service Usage Preference	Vehicle Preference Tag	Social Attribute
Product Subscriptions	Business		Call Behavior	Active Voice Call Time	Music Behavior & Composite Tag	Channel Preference	Maternal & Infant Preference Tag	Family Structure
Service Habits	Social Events		SMS Behavior	Data Active Time	Tourism Behavior & Composite Tag	Service Contact Preference	XXX Preference Tag	Wealth
Consumption Features			VAS Behavior	Service Position	XXX Behavior & Composite Tag	Complaint Trend		Consumption Capability
				Time & Location Feature		Health Status
Industry Communication			Internet Domain Behavior Tag	Internet Domain Composite Tag		Video Attribute Preference		Interest
			Content Behavior	Video Content + Preiod		Music Attribute Preference		Work
			Business Behavior	Online Shipping+ Time+Location		Reading Attribute Preference		Contact Group
			Social Behavior	Social Time+Location		Offering Attribute Preference		...
				Music Content+Period		Social Attribute Preference		
				Reading+Time+ Location				

Profile
Attribute
Tag
Segment

데이터 분석가의 현실은... 불합리한 시간 소모

During a typical data science project at work or school, approximately what proportion of your time is devoted to the following?

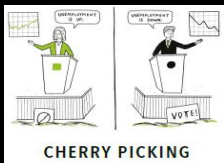


Note: Data are from the 2018 Kaggle ML and Data Science Survey. You can learn more about the study here: <http://www.kaggle.com/kaggle/kaggle-survey-2018>. A total of 23859 respondents completed the survey; the percentages in the graph are based on a total of 15937 respondents who provided an answer to this question. Only selected job titles are presented.

Interestingly, even though the [practice of data science](#) is defined as a way of extracting insights from data, the survey results showed that data professionals only spend about 11% of their time on this activity. In fact, prior research found that data science projects require [different types of skills and abilities](#), including programming expertise, statistics knowledge and subject matter expertise. The current results show that these diverse skill sets reflect the different activities that underlie data science projects.

데이터 분석가의 현실은... 데이터 오류들(1/2)

Real Practice of Data



Selecting results that fit your claim and excluding those that don't



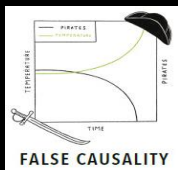
Repeatedly testing new hypotheses against the same set of data, falling to acknowledge that most correlations will be the result of chance



Drawing conclusions from an incomplete set of data, because that data has survived some selection criteria



Setting an incentive that accidentally produces the opposite result to the one intended. Also known as a perverse incentive



Falsely assuming when two events appear related that one must have caused the other



Manipulating the geographical boundaries used to group data in order to change the result



Drawing conclusions from a set of data that isn't representative of the population you're trying to understand



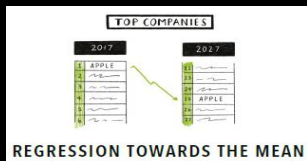
Mistakenly believing that because something has happened more frequently than usual, it's now less likely to happen in future (and vice versa)



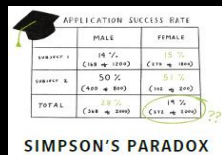
The act of monitoring someone can affect their behavior, leading to spurious findings. Also known as the Observer Effect

데이터 분석가의 현실은... 데이터 오류들(2/2)

Real Practice of Data



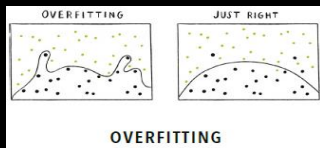
When something happens that's unusually good or bad, it will revert back towards the average over time



When a trend appears in different subsets of data but disappears or reverses when the groups are combined



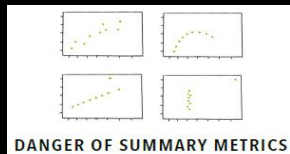
Relying solely on metrics in complex situations and losing sight of the bigger picture



Creating a model that's overly tailored to the data you have and not representative of the general trend



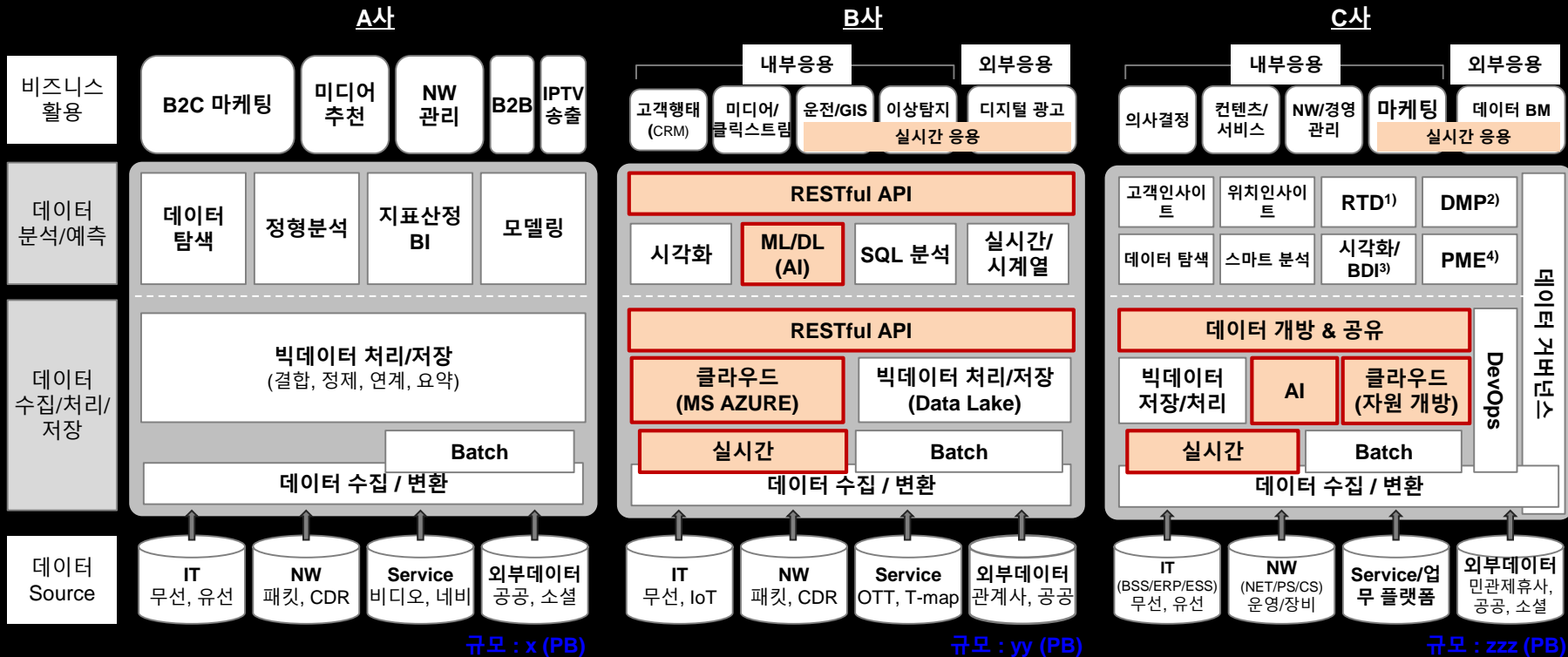
Interesting research findings are more likely to be published, distorting our impression of reality



Only looking at summary metrics and missing big differences in the raw data

빅데이터 플랫폼 고도화

Data Foundation Modernization



1) RTD: Real-Time Decision
 2) DMP: Data Mgmt Platform
 3) BDI: Big Data Intelligence
 4) PME: Probabilistic Matching Engine

분석 환경 혁신에 대한
기대사항으로는...

Our PoV on Data in the Telecom industry

Q & A

