



**CANBACK DANGEL INTRODUCTION AND
CELLULAR OPERATOR ANALYSIS TOOL
OVERVIEW**

December 2007

**PREDICTIVE
ANALYTICS
INTEGRATORS**

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Introduction to Canback Dangel

Cellular operator analysis tool (COAT)

Canback Dangel was founded in 2004 with the goal of applying predictive insights techniques to management problems



**SENIOR
LEADERSHIP**



Dr Staffan Canback
Boston

Founded in 2004 by Dr Staffan Canback and Justin Dangel to bring newly developed, scientific approaches to management practice

Serves leading consumer-facing companies in consumer goods, retail, financial services and telecom sectors with a focus on opportunities in emerging countries

Uses predictive analytics to help clients draw reliable, fact-based conclusions about the future based on sophisticated analyses of internal and external data



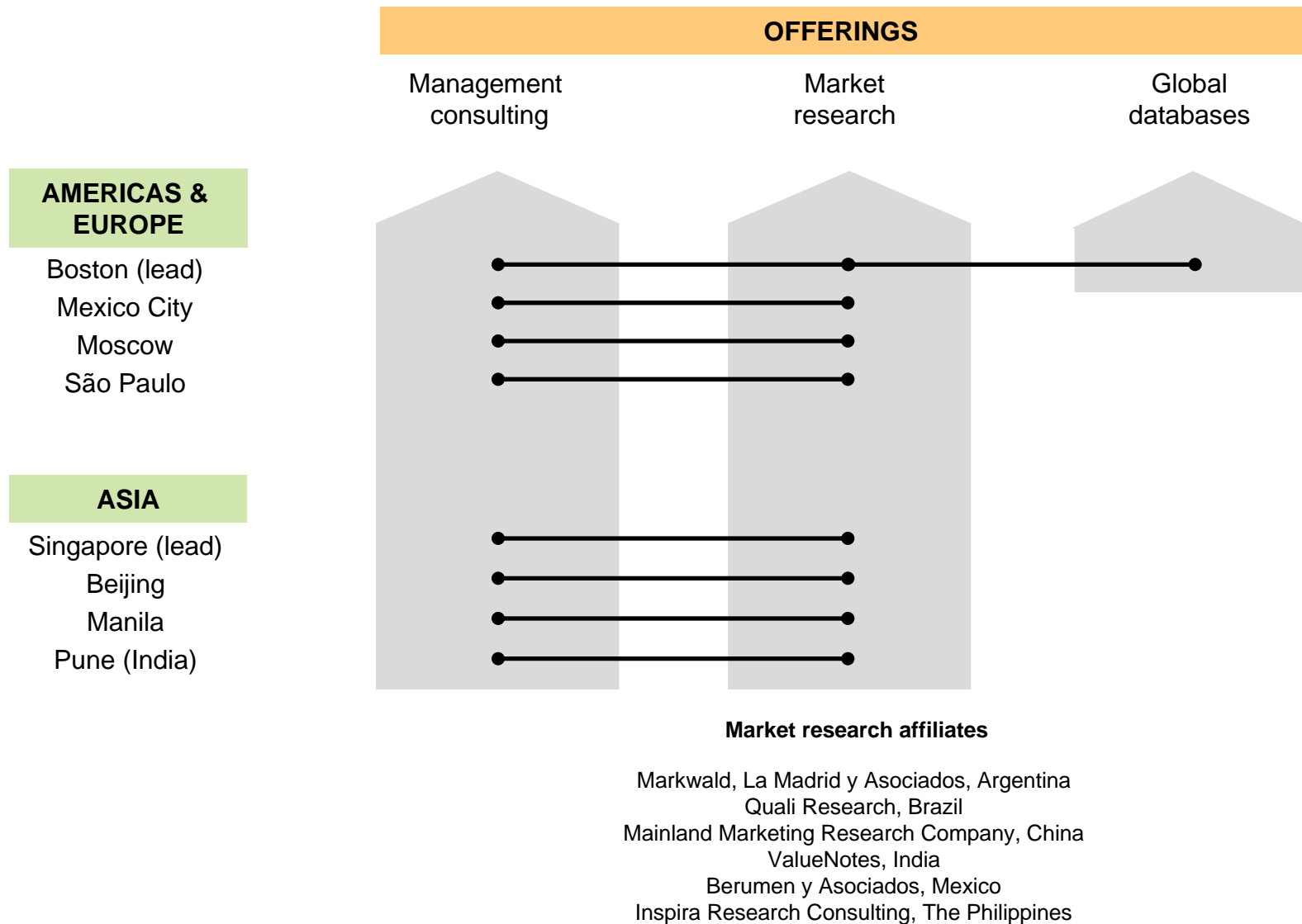
Frank D'Agnese
Boston

Uniqueness based on integrative consulting capabilities, empirically derived market and consumer models, proprietary databases and global presence

Speaks the language of senior management



Canback Dangel works on management consulting and market research projects around the world, while database management is centralized in Boston



Since its start in 2004, Canback Dangel has completed more than 30 projects for consumer-facing companies



Company description	Product description	Geography	Project
US food company	Food	Brazil, China, Mexico, Philippines	Create business plan for new type of functional food with revolutionary health benefits
US food company	Food	India	Assess future market in category and 11 sub-categories
US household and personal products company	Personal care products	Russia	Market sizing and demand predicting
US household and personal products company	Personal care products	Russia	Regional pricing analysis for premium brands
US household and personal products company	Personal care products	Global	Market sizing and short-term forecasting for resource allocation
US food company	Food	Argentina	Category attractiveness assessment and brand positioning
US household and personal products company	Personal care products	Latin America	Market sizing and demand predictions
US household and personal products company	Personal care products	China	Market sizing and demand predictions
US food company	Food	Mexico	Category attractiveness assessment and brand positioning
US household and personal products company	Personal care products	China, India, Indonesia	Provincial pricing analysis to support tiered pricing strategy
US household and personal products company	Personal care products	US, UK, Germany, France, Japan	Analysis of interactions between low-end and premium products
German consumer products company	Household appliances	Russia	Market sizing and demand predictions for three product categories
US telecom company	Cellular services	China	Strategic evaluation of market prospects
US telecom company	Cellular services	China	Profitability analysis for third market entrant
US food company	Food	Brazil	Market sizing and demand predicting, category assessment and consumer profiling
US food company	Food	China	Predictive insights on market prospects, consumer preferences, and trade development
US food company	Food	Russia	Predictive insights on market prospects, consumer preferences, and trade development
International development agency	Banking	Sub-Saharan	Market sizing and forecasting with demand driver analysis
International development agency	Cellular services	Sub-Saharan	Market sizing and forecasting with demand driver analysis
US food company	Food	Brazil	Predictive insights on market prospects, consumer preferences, and trade development
US household and personal products company	Personal care products	Brazil, Russia, India, Indonesia, China	Assessment of modern retail trade trends
US food company	Food	Germany	Category attractiveness assessment
Chinese specialty retailer	Jewelry	China	Focus group interviews to support product mix optimization
Chinese food company	Snack foods	China	Survey exploring attitudes and preferences for local vs. international branded snacks
Chinese food company	Alcohol	China	Consumer surveys to profile segments



Introduction to Canback Dangel

Cellular operator analysis tool (COAT)

The COAT database allows Canback Dangel to predict future winners and losers among cellular operators around the world, and to understand what drives profitability and growth



OVERVIEW OF COAT (CELLULAR OPERATOR ANALYSIS TOOL) DATABASE

BACKGROUND

- Originally developed in 1999 to model cellular profitability and 3rd entrant probability of success in emerging European markets
- Builds on country and operator data collected from annual reports, analysts, regulators, and proprietary sources
- Continuously updated. Special update for this effort with Asian emerging market operators
- Uses pooled time series cross-sectional analysis for the years 1999-2006

COUNTRY VARIABLES

Cellular market size
 Cellular penetration
 Cellular revenue
 Cellular revenue growth
 GDP
 GDP growth
 Market age
 Market concentration
 Number of operators
 Population
 3G network starting year

MARKET VARIABLES

Cellular revenue
 Cellular revenue growth
 Country ARPU
 Country cellular EBIT
 Country minutes
 Entry order
 Global capex
 Global total EBIT
 Global total revenue
 Market share
 Users
 Years in market

COUNTRIES*

Australia	Lithuania
Canada	Malaysia
China	Mexico
Czech Republic	Netherlands
Egypt	Pakistan
Greece	Philippines
Hong Kong	Portugal
Hungary	Russia
India	South Africa
Ireland	S. Korea
Italy	Spain
Japan	Sweden

Airtel (India)
 Bell Canada (Canada)
 Bite (Lithuania)
 Celcom (Malaysia)
 China Mobile (China)
 China Unicom (China)
 Cosmote (Greece)
 Globe Telecom (Philippines)
 Hutchison (Hong Kong)
 IUSACELL (Mexico)
 KPN (Netherlands)
 KTF (S Korea)

Maxis (Malaysia)
 Mobile Telesystems (Russia)
 Mobilink (Pakistan)
 Mobinil (Egypt)
 MTN (S Africa)
 NTT DoCoMo (Japan)
 O2 (Ireland)
 Omnitel Vodafone (Italy)
 Optus (Australia)
 Oskar (Czech Republic)
 Pannon (Hungary)
 Peoples Phone (Hong Kong)

OPERATORS*

PLDT (Philippines)
 Portugal Telecom (Portugal)
 Reliance Infocomm (India)
 Rogers (Canada)
 SK Telecom (S. Korea)
 SmarTone (Hong Kong)
 Tele2 (Lithuania)
 Telecel Vodafone (Portugal)
 Telefonica (Spain)
 TeliaSonera (Sweden)
 Telstra (Australia)
 TIM (Greece)

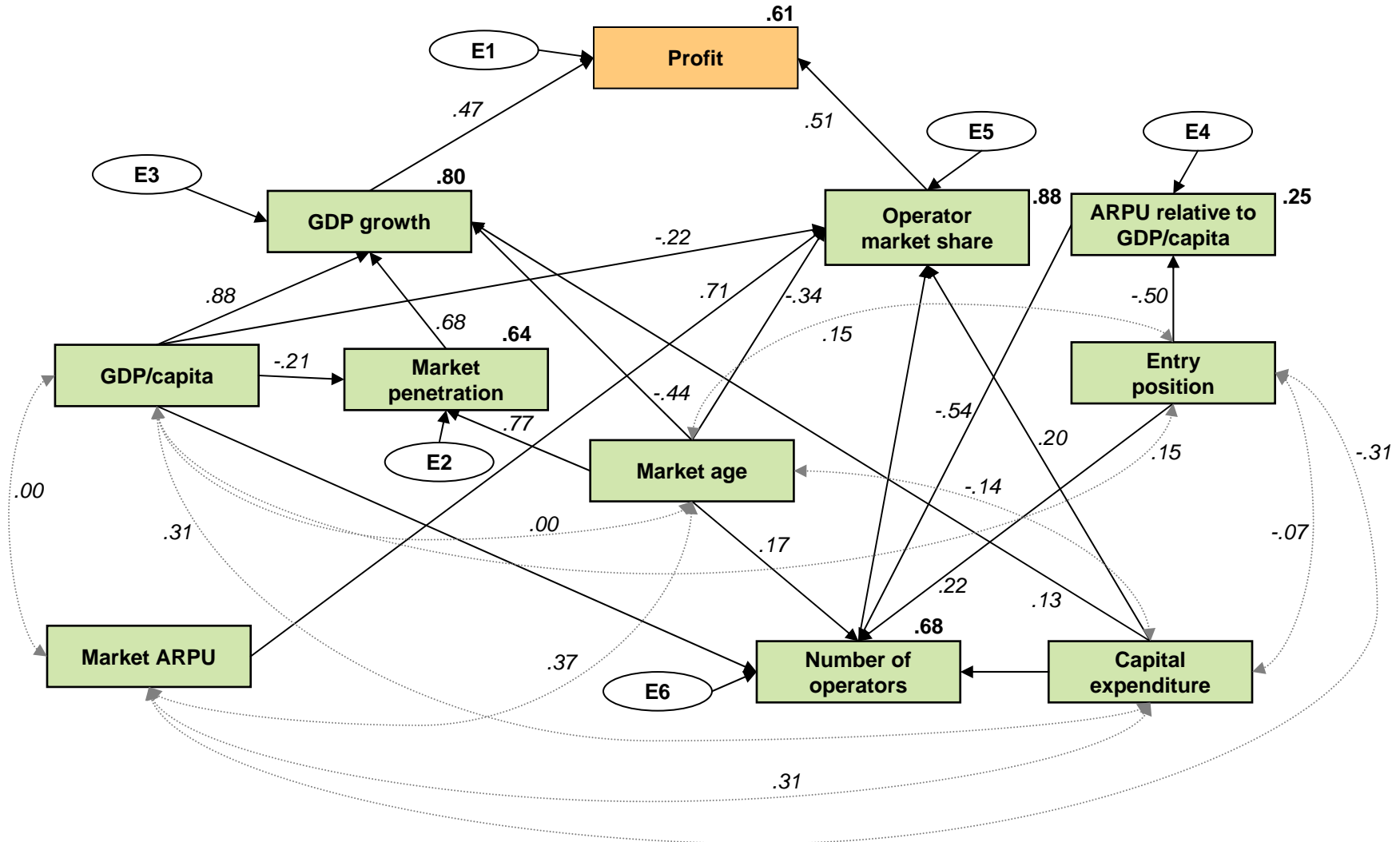
T-Mobil (Czech Republic)
 Ufone (Pakistan)
 Vodacom (S Africa)
 Vodafone (Greece)
 Vodafone (Eircell) (Ireland)
 Vodafone (J-Phone) (Japan)
 Vodafone (Netherlands)
 Vodafone Egypt (Egypt)
 Vodafone Spain (Spain)
 Westel (Hungary)

* Countries and operators used for a particular effort. There are 12 additional countries and 28 operators in the total database.



The COAT database is analyzed using a sophisticated structural equation model (SEM)

PARTIAL PATH DIAGRAM FOR PROFITS IN THE CELLULAR OPERATOR MARKET
Disguised, with variable names transposed

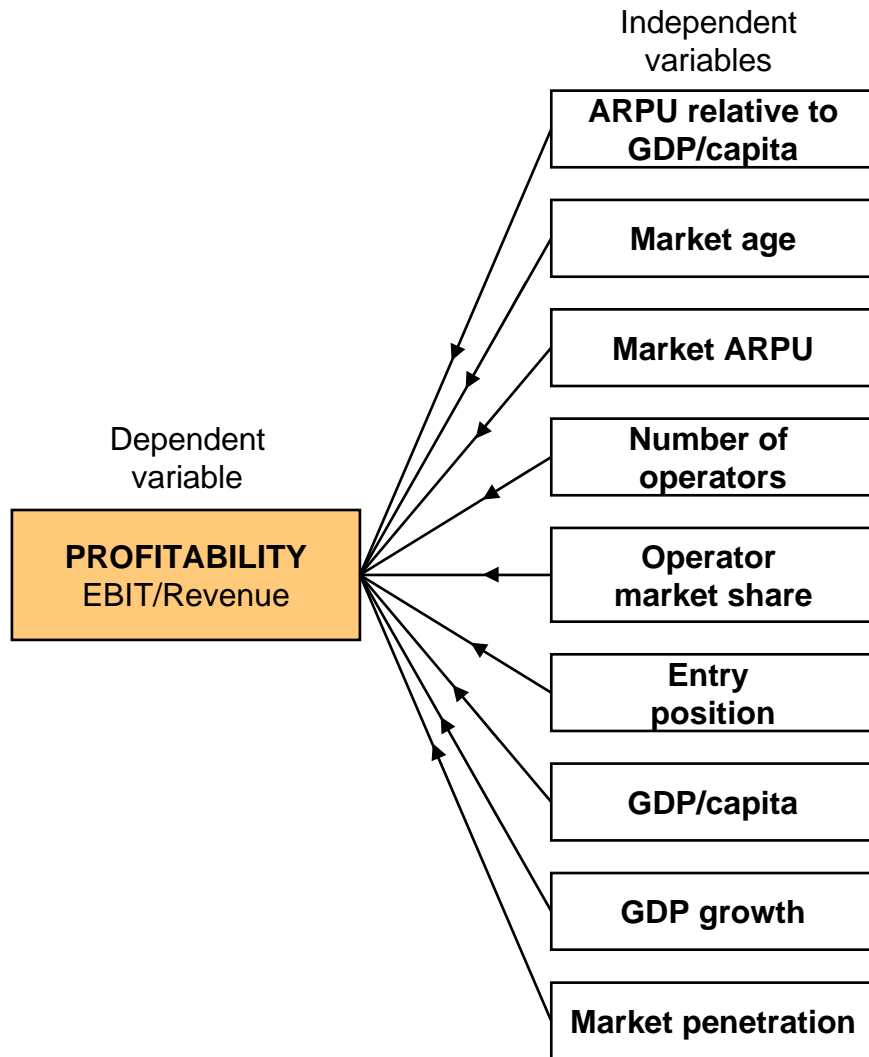


Note: Based on 37 operators in 22 countries
Source: COAT, Carback Dangel analysis

This technical approach is converted into a set of simplified relationships, to understand and explain the drivers of profitability (or growth—not shown here)



PATH DIAGRAM FOR CELLULAR OPERATOR PROFITABILITY



MIN. IN SAMPLE	MAX. IN SAMPLE
0.5	32
3	22
6	80
2	6
5%	90%
1	4
450	48,000
-1%	+10%
11%	94%

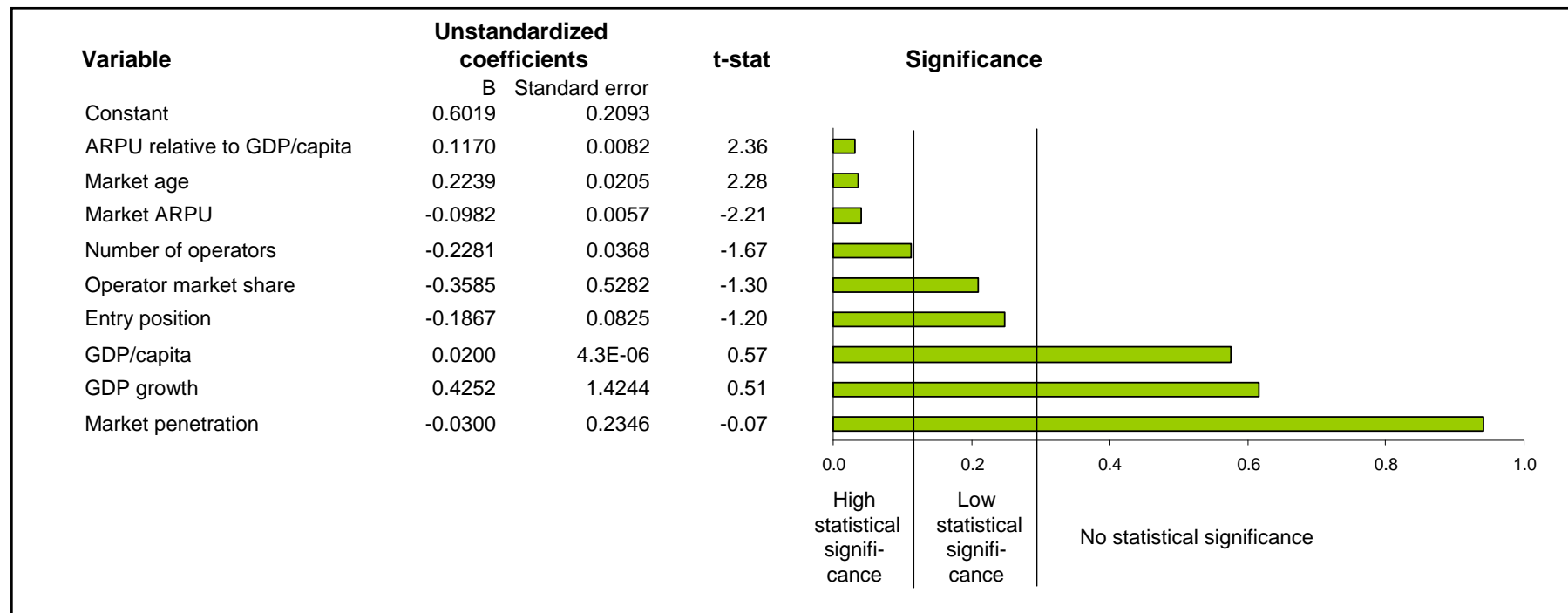
Note: EBIT/Revenue is the only profitability metric easy to collect for most operators
Source: COAT



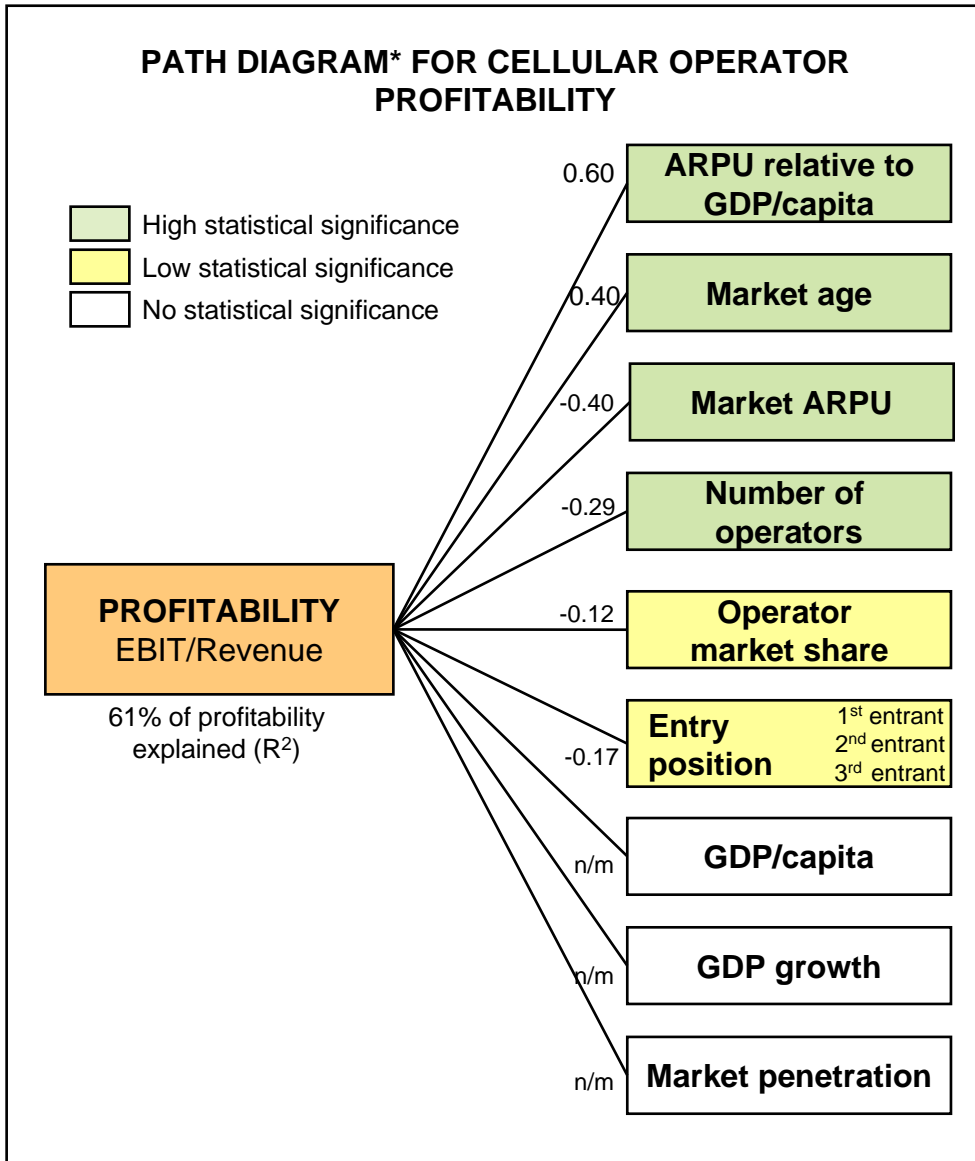
The analysis quantifies the importance of each profitability and/or growth driver

MODEL SUMMARY

R	R ²	Standard error of the estimate	Durbin-Watson
0.78	0.61	0.12	2.0



The result is a detailed understanding of what drives growth and/or profitability, and how operators can succeed in a given environment



COMMENTS

In a given market, a high ARPU strategy leads to higher profitability

The longer the cellular market has existed, the higher the profitability. (This is true in most markets and industries.)

Operators with high prices are less profitable.

Profitability declines with the number of operators

Operator market share has a slight negative impact on profitability

Third entrants are perhaps slightly disadvantaged, but the statistical significance is low, and disappears if 1st, 2nd, 3rd entrant groups are tested separately

Rich (OECD) markets are neither more or less profitable than emerging markets

General GDP growth does not influence profitability

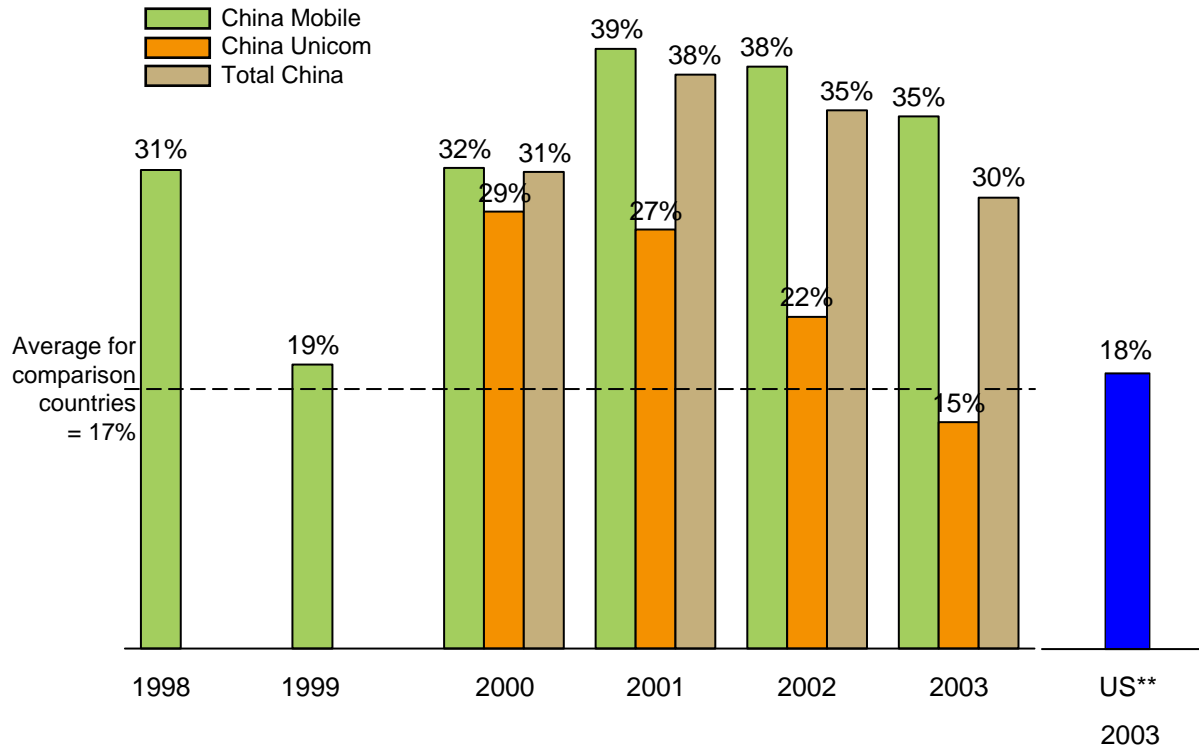
The level of market penetration does not affect profitability

* Based on a statistical (SEM) analysis of 46 operators in 24 countries between 1999 and 2004 (pooled time series cross-sectional analysis).
 Source: COAT, Canback Dangel analysis

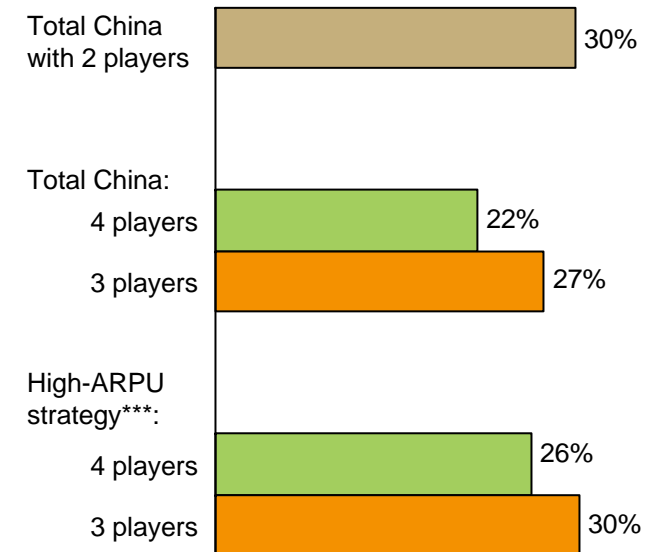
The COAT database can be used, for example, to predict the success of new market entrants or new price strategies



PROFITABILITY IN THE CHINESE CELLULAR OPERATOR MARKET EBIT/Revenue



PROFITABILITY SENSITIVITY ANALYSIS* 2003



* Based on a statistical (SEM) analysis of 46 operators in 24 countries between 1999 and 2004 (pooled time series cross-sectional analysis)

** Data for US includes Cingular, Nextel and Verizon

*** High-ARPU strategy defined as 25% above China Mobile's 2003 ARPU

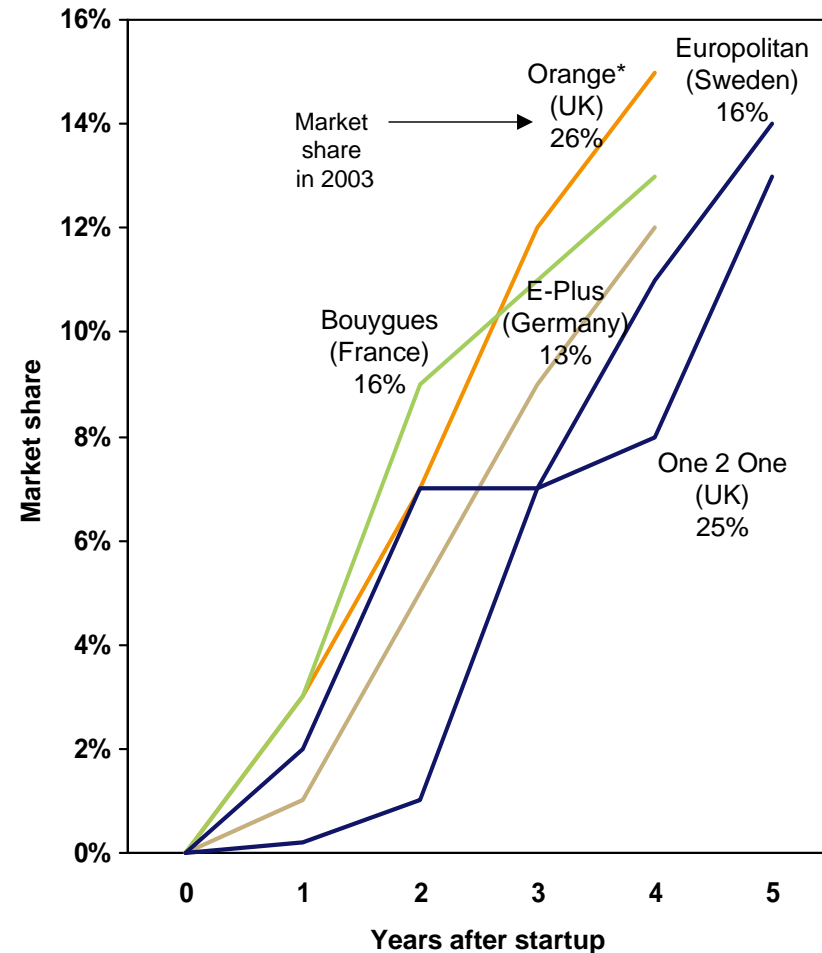
Source: COAT, annual reports, Canback Dangel analysis

An interesting insight that the COAT database reveals is that late entrants to cellular services markets can be successful quickly—provided they pursue distinct marketing strategies



- China's market is large enough to support a third, fourth, and even perhaps a fifth player
- Third entrants have time and time again been successful
- Pursuing a high ARPU strategy is likely to be successful
- A solid market position can be built within a few years

MARKET SHARE GAINED BY 3RD ENTRANTS



* 4th entrant
Source: COAT, annual and analyst reports, Canback Dangel analysis



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