MATHER ECONOMICS

COMPANY OVERVIEW

mather:

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Atlanta, GA 30350

www.mathereconomics.com

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COMPANY OVERVIEW

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OUR COMPANY PROFILE

2002

Founded in 2002, Mather Economics applies predictive modeling and rigorous testing to improve business performance.

600+

Mather Economics manages customer revenue and strategic pricing for over 600 clients with over $4 billion in annual consumer revenue and 30 million customers.

45+

Mather Economics has 45+ employees. Our offices are headquartered in Atlanta, Georgia with offices in Chicago, and Amsterdam.

10 to 1

Our typical client engagement provides a 10-to-1 return on investment. We provide revenue growth while lowering risks from pricing actions.

OUR MISSION AND COMMITTMENT

Mather Economics reveals profit-growth opportunities for your existing and potential customers using insightful analysis and practical application.

Successful profit growth initiatives require not only data but also a talented team of experts to translate your data into actionable insights that deliver success and grow revenue.

- Increase revenues by performing proprietary data analytics, econometric modeling, and forecasting while utilizing periodically supplied consumer data or data gathered through online channels
- Supply recommendations and implement strategies to ensure that we are in partnership with our clients to achieve mutually established, measurable goals
- Report results concisely and consistently in user-friendly dashboards that highlight key-metrics, sortable segments, and summary tabs

OUR CLIENTS

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COMMON CLIENT CHALLENGES

Over the years, we have encountered common challenges that clients face.

- Increasing revenue without losing customers
- Minimizing churn from current customers
- Defining true costs of acquiring or re-acquiring customers
- Identifying customers that are most important to long-term success
- Determining whom is most likely to buy again and when
- Optimizing pricing for advertising services to existing and prospective customers
- Budgeting consumer revenue while continually adjusting prices, acquiring new customers and retaining existing customers
- Identifying the optimum balance between customer volume and pricing levels

COMMON CLIENT RESULTS

- 10x return on investment for projects fees - verified by A/B testing

- 10% recurring revenue growth

- 30% reduction in customer churn

- Customer Lifetime Value determined for both anonymous and known digital consumers

- Creation of actionable audience segments by online behavior and offline characteristics

- Monetized online content while maximizing ad revenues without negatively impacting consumer engagement

- Independent economic and feasibility analyses

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U.S. CLIENTS
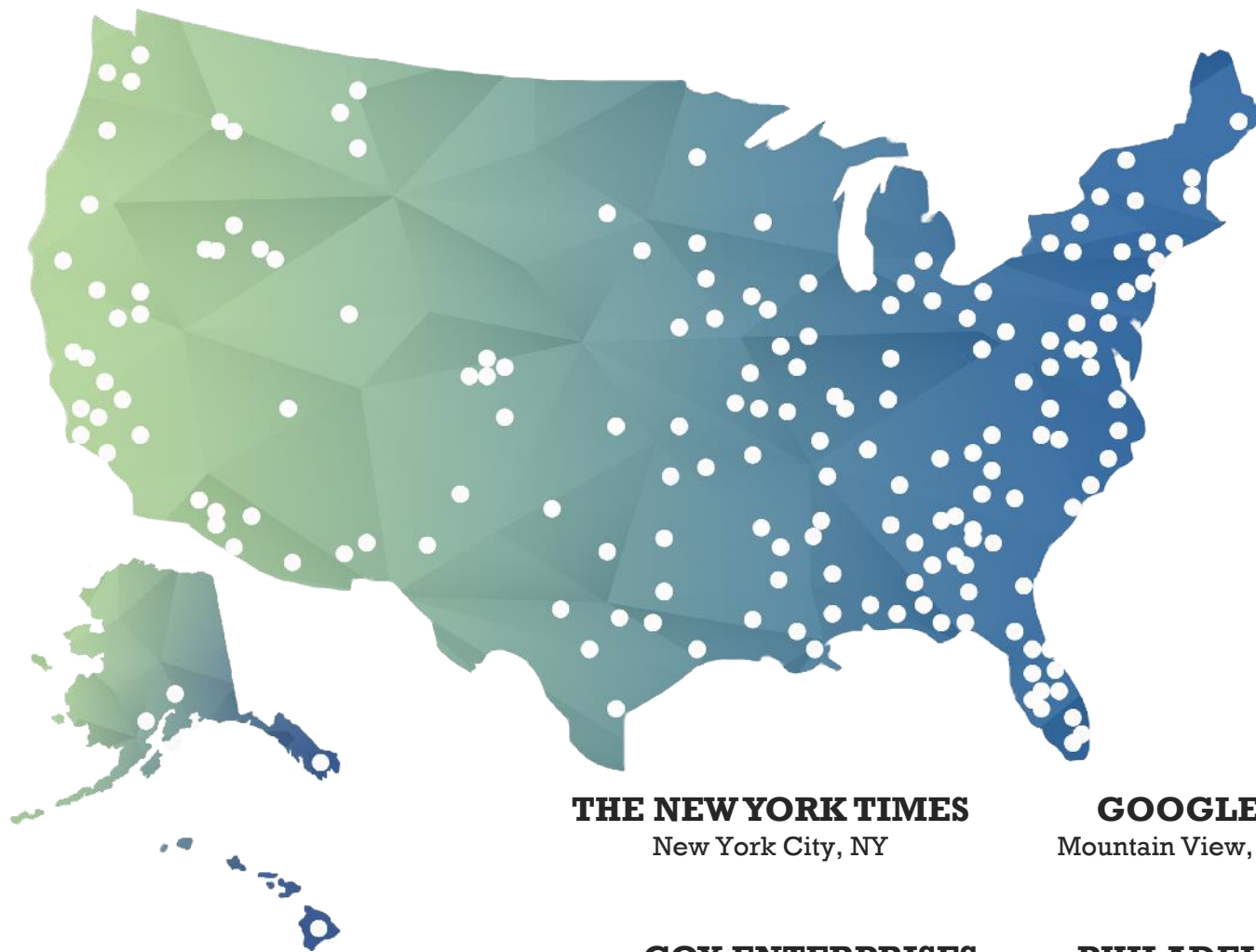
THE WALL STREET JOURNAL
New York, NY

ADVANCE LOCAL
New York, NY

SMITHSONIAN INSTITUTION
Washington, D.C.

GANNETT
McLean, VA

NBA
New York, NY

GATEHOUSE MEDIA
Fairport, NY

THE HOME DEPOT
Atlanta, GA

NY POST
New York, NY

HEARST CORPORATION
New York, NY

TRIBUNE MEDIA
Chicago, IL

DALLAS MORNING NEWS
Dallas, TX

NEWSDAY
Melville, NY

THE NEW YORK TIMES
New York City, NY

GOOGLE
Mountain View, CA

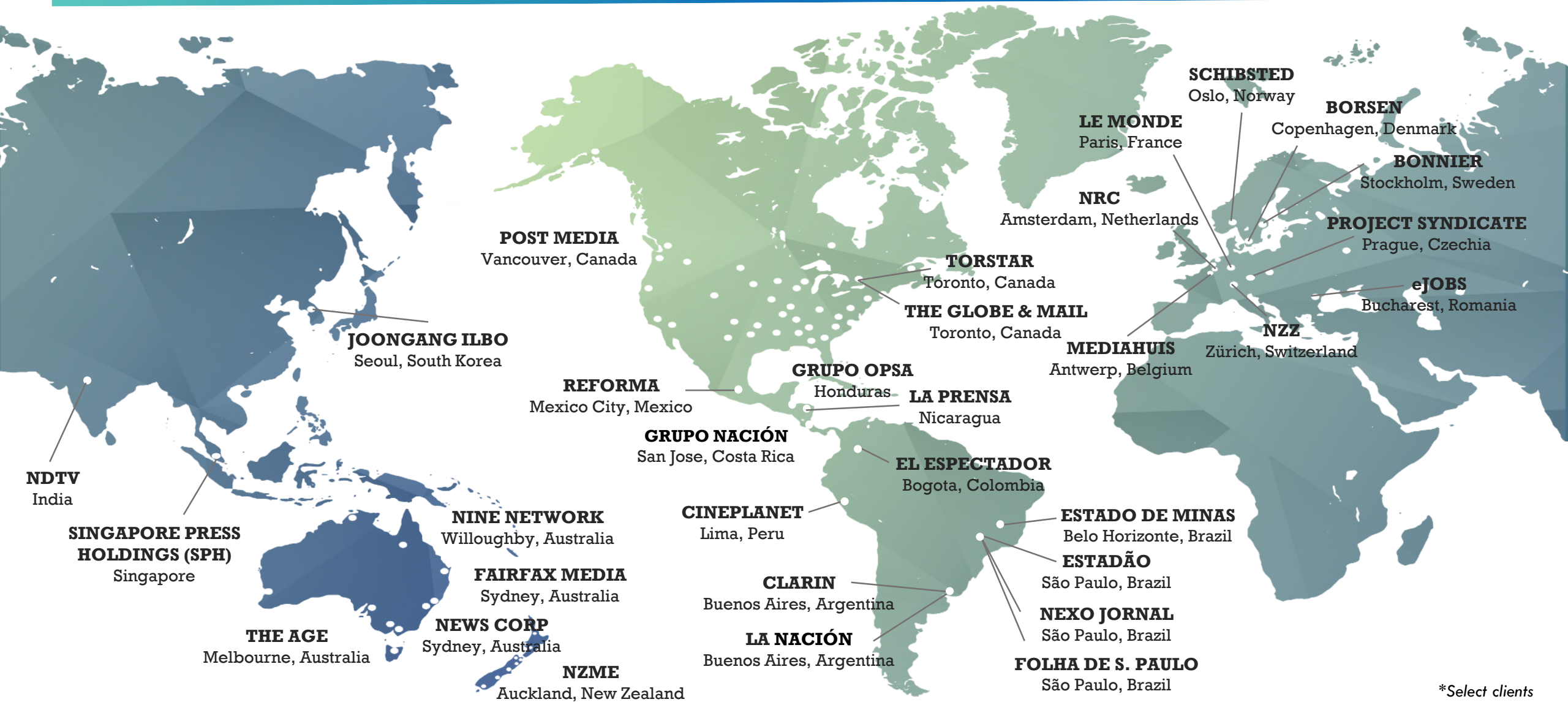**SCIENTIFIC GAMES**
Las Vegas, NV

MCCLATCHY
Sacramento, CA

INTERCONTINENTAL EXCHANGE
Atlanta, GA

COX ENTERPRISES
Atlanta, GA

PHILADELPHIA INQUIRER
Philadelphia, PA

Select clients

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9

INTERNATIONAL CLIENTS

SCHIBSTED
Oslo, Norway

BORSEN
Copenhagen, Denmark

LE MONDE
Paris, France

BONNIER
Stockholm, Sweden

NRC
Amsterdam, Netherlands

PROJECT SYNDICATE
Prague, Czechia

POST MEDIA
Vancouver, Canada

TORSTAR
Toronto, Canada

eJOBS
Bucharest, Romania

THE GLOBE & MAIL
Toronto, Canada

NZZ
Zürich, Switzerland

JOONGANG ILBO
Seoul, South Korea

MEDIAHUIS
Antwerp, Belgium

REFORMA
Mexico City, Mexico

GRUPO OPSA
Honduras

LA PRENSA
Nicaragua

GRUPO NACIÓN
San Jose, Costa Rica

EL ESPECTADOR
Bogota, Colombia

NDTV
India

CINEPLANET
Lima, Peru

ESTADO DE MINAS
Belo Horizonte, Brazil

SINGAPORE PRESS
HOLDINGS (SPH)
Singapore

NINE NETWORK
Willoughby, Australia

ESTADÃO
São Paulo, Brazil

CLARIN
Buenos Aires, Argentina

FAIRFAX MEDIA
Sydney, Australia

NEXO JORNAL
São Paulo, Brazil

NEWS CORP
Sydney, Australia

LA NACIÓN
Buenos Aires, Argentina

THE AGE
Melbourne, Australia

FOLHA DE S. PAULO
São Paulo, Brazil

NZME
Auckland, New Zealand

*Select clients

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OUR SERVICES

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OUR SERVICES

- Strategic Pricing Analysis

- Audience Analytics

- Content Economics

- Market Based Pricing

- Customer Lifetime Value (CLV)

- Churn Modeling

- Customer Acquisition

- Revenue Forecasting

- Listener™ Digital Data

- Advertising Rate Analytics

MARKET BASED PRICING

Yield management for recurring consumer revenue

Market Based Pricing is a targeted renewal pricing program for companies that have recurring customer relationships, such as subscribers or members, that maximizes consumer revenue while minimizing potential customer loss.

The primary benefit of this program is the significant reduction in customer churn compared with standard subscription pricing strategies. Success of the pricing program is verified using continuous A/B testing.

Yield management is commonly used by other industries such as airlines, hotels, rental car, and automotive companies.

MARKET BASED PRICING (MBP)

Market Based Pricing manages profitability at the customer and/or unit level.

It allows pricing to be matched to a customer's individual value of a product or service to maximize revenue yield for a given level of pricing risk. It also calculates operating margins for each account using revenue, direct and operating costs, and capital investments.

Each customer or unit price is analyzed at key points in their lifecycle and utilizes 1-to-1 account management to optimize pricing.

A customer's price elasticity changes over time. Many factors influence our pricing models, which are customized for each client. Weekly reports compare actual revenue and cash flows to predictions, and the are validated using ongoing test and control groups.

Plot of Renewal Price Algortithm
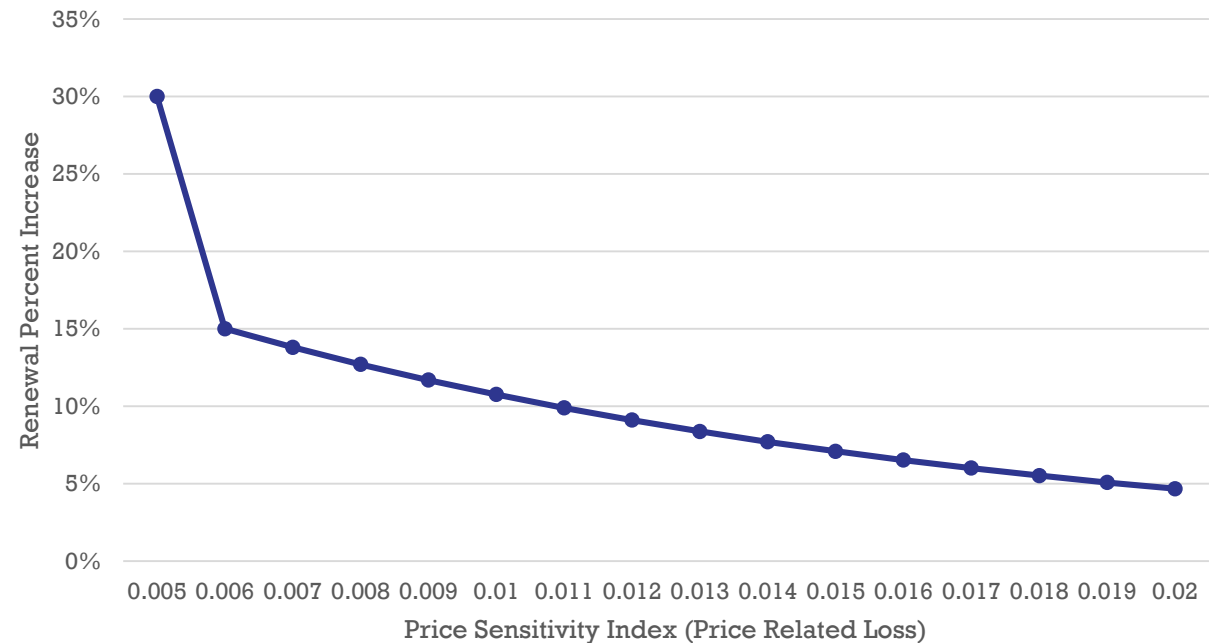
Lower Price Sensitivity ← **Survival Model Results** → Higher Price Sensitivity

CUSTOMER LIFETIME VALUE

Quantify the net profit expected from the relationship with a customer

Understanding that not all customers are equally important is a vital concept.

Companies should prioritize customers based on the long-term profitability of their relationships.

CUSTOMER LIFETIME VALUE (CLV)

CLV is the risk-adjusted operating margin for an individual customer for the next two to five years.

CLV can be applied as a scoring model to predict the most profitable group of customers.

It can leverage Total CLV across the subscription base as a KPI to track measurable progress towards improving the long-term value.

Understanding common characteristics of high CLV customers in order to focus more resources on acquiring, retaining, and engaging with them rather than less profitable customers.

By drilling down on each individual separately, our CLV programs allow for the most targeted and accurate campaigns, resulting insights, and further application.

SUBSCRIPTION PRICE	$4.49/week	$13.96/week
PRODUCT	Digital Only	Full Print + Digital
TENURE	0-1 Years	5+ Years
INCOME	Moderate	High
AGE	Younger	Mature
PAYMENT METHOD	Credit Card Auto-Renewal	Printed Bill
5 YEAR CLV	$436	$2,304
CLV SCORE INDEX	10	95

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CHURN MODELING

A majority of subscriber churn is not related to price.

Mather can help reduce non-pricing related churn, through development of a model using existing subscriber data to estimate churn propensities at the subscriber level.

Markets can then segment market based on churn risk and take preemptive action to save at-risk subs.

CHURN MODELING

Churn modeling calculates the likelihood that an individual will discontinue services due to a specific event.

Once we've answered **who** is likely to churn, the question then becomes **what** can be done about it?

Common characteristics of successful initiatives driven by churn scores:

- Targeted to individual subscribers

- Measured accurately (A/B tests, metrics reporting)

- Earlier intervention than typical

- Time spent on a quality creative

BASE VAR	VAR DESC	VARIABLE	UNRESTRICTED 2 COEFF	Z
NONEZPAY DS	Weekly Price	wp	-0.108***	(-16.98)
	Increase Amount	wpsp	0.0653***	(-4.47)
	Ezpay	_IEZpay_1	-1.889***	(-18.52)
	Saturday Only	freq==Bnnnnnny	-0.627***	(-13.78)
	Weekend	freq==Cynnnnny	-0.145**	(-3.06)
	Mon-Sat	freq==Dnyyyyyy	-0.310**	(-2.87)
	Sunday Only	freq==Eynnnnnn	-1.130***	(-8.84)
	Mon-Fri	freq==Fnyyyyyn	-0.375***	(-3.39)
	Other	freq==OA	-0.390	(-1.68)
13 WEEKS	4 Weeks	period==4	0.293**	(2.86)
	26 Weeks	period==26	-1.028***	(-22.71)
	52 Weeks	period==52	-2.833***	(-21.82)
	Other	period==OA	-0.216***	(-3.90)
OTHER	Crew	source==crew	0.243**	(2.94)
	Custcall	source==custcall	-0.411***	(-6.62)
	DirectML	source==directml	-0.961***	(-6.04)
	Internet	source==internet	-1.867***	(-28.78)
	Kiosk	source==kiosk	-0.523***	(-7.13)
	Telemkt	source==telemkt	-0.787***	(-10.72)
LESS THAN 1 YR	1-2 Years	tenure==1-2 years	-0.484***	(-11.29)
	2-3 Years	tenure==2-3 years	-0.633***	(-11.79)
	3-4 Years	tenure==3-4 years	-0.841***	(-11.16)
	4-5 Years	tenure==4-5 years	-0.831***	(-9.31)
	5+ Years	tenure==5 + years	-1.220***	(-27.50)
	Quarterly Comp Rate>1SD of avg	compl_m_above_sd1	0.0969	(0.74)
	Quarterly Comp Rate>2SD of avg	compl_m_above_sd2	-0.575**	(-2.73)
	Quarterly Comp Rate<1SD of avg	compl_m_below_sd1	-0.430***	(-3.95)
	Quarterly Comp Rate<2SD of avg	compl_m_below_sd2	.	.
	Switch to Autopay	EZup_flag	-2.841***	(-5.53)
	Switch off Autopay	EZdown_flag	-0.0336	(-0.14)
	Period Change	period_switch==1	0.651***	(15.38)
	Fod Change	fod_switch==1	1.841***	(11.41)
	% Income Spent on Shelter	perc_spend_shelter	0.649***	(6.88)
	Late	comps_g1_last_m_dummy	-0.368	(-1.37)
	Location	comps_g2_last_m_dummy	-0.158	(-0.55)
	Missed Delivery	comps_g3_last_m_dummy	-1.288***	(-13.13)
	Missing Section	comps_g4_last_m_dummy	-1.342***	(-5.77)
	Non-Start	comps_g5_last_m_dummy	-0.487	(-1.06)
	Non-Stop	comps_g6_last_m_dummy	-1.527***	(-4.67)
	Other	comps_g7_last_m_dummy	-0.332	(-1.40)
	Wet/Damaged	comps_g8_last_m_dummy	-1.253***	(-4.20)

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CUSTOMER ACQUISITION

Acquisition analysis facilitates the identification of the offers most likely to be accepted by a given household.

A propensity to subscribe metric can be assigned to every potential customer. This metric can be combined with CLV to establish an excellent analytical framework for evaluating customer relationships and quantifying strategic options for customer-relationship management.

CUSTOMER ACQUISITION

Targeted acquisition offer pricing can lead to increased revenue while minimizing customer losses.

Applying a Customer Lifetime Value framework to the customer acquisition process allows for a robust evaluation of prospects for acquisition. Leveraging historical campaign data enables us to estimate a household's 'propensity to subscribe'.

The propensity score can be combined with an acquisition offer's characteristics to calculate the five-year value per prospect. Optimal acquisition offers can be developed by maximizing total predicted operating margin for a period of time.
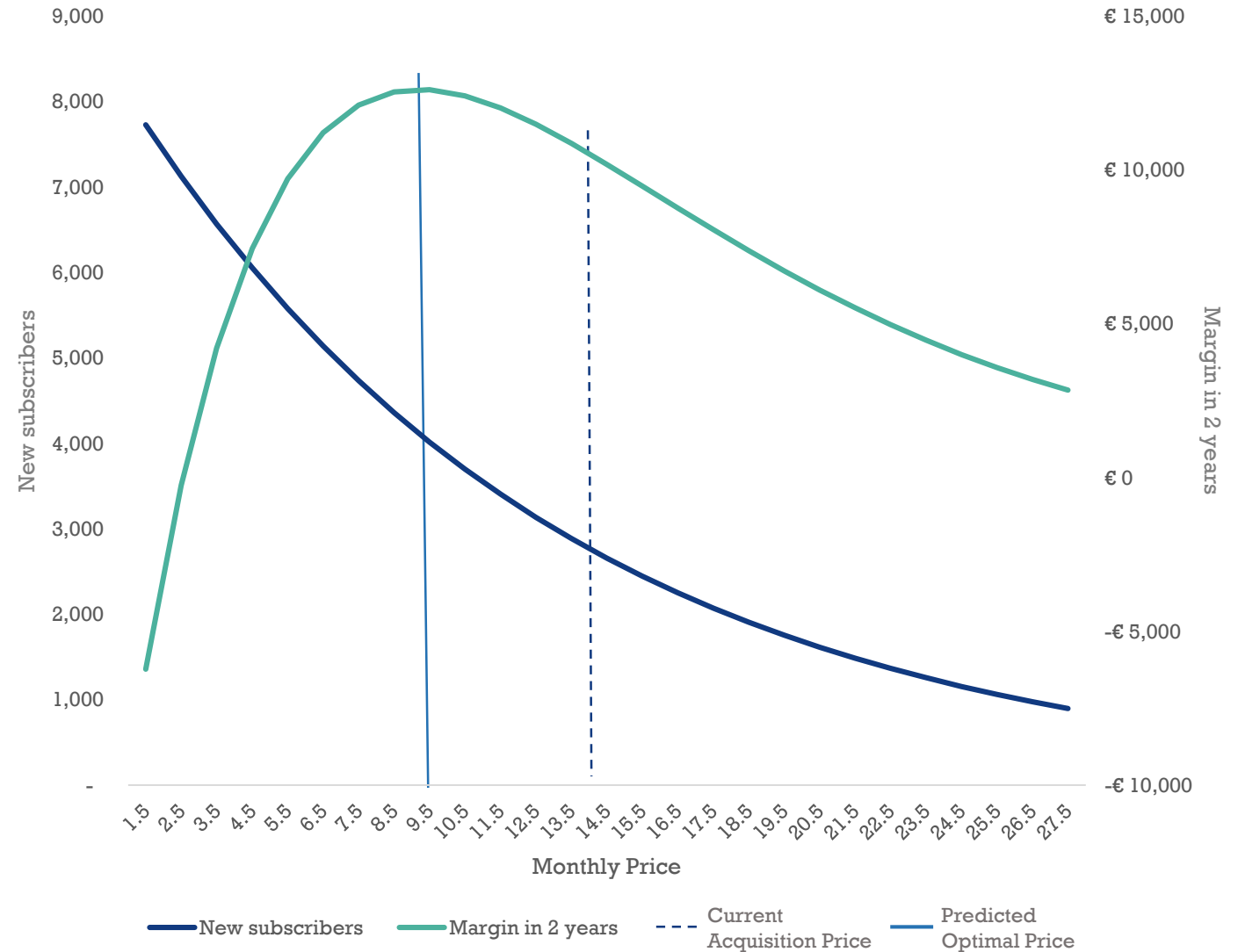
REVENUE FORECASTING

Holistic approach to managing revenue

Take a bottom up budgeting approach for recurring-revenue businesses. Using this approach, the cumulative effect of all customer activity will determine the revenue forecast.

REVENUE FORECASTING

Identifying revenue shortfalls early and taking corrective action as soon as possible will avoid much larger problems and harder solutions later in the year.

Mather Economics uses customer data to estimate key factors in revenue forecasting, including base-customer revenue, attrition, new acquisition, acquisition churn, retention, price sensitivity, and seasonality.

Differences in any of these areas that materially affects the budget will be reflected in the revenue forecast. Revenue forecasts are updated each week based on actual results, as small differences from the forecast each week will result in large revenue changes over time.

PRICING

- Price customers at optimal level, that also balances revenue expectations
- Aligning increases with product enhancements
- Price more or less aggressively depending on long-term profitability of customers

NEW ACQUISITION

- Acquiring new customers at profitable rates
- Targeted reacquisition for former customers
- Reporting and analysis for optimal market offers

RETENTION

- Retaining existing customers, particularly those who are profitable
- Incorporate all engagement to retention scoring
- Churn scoring

MANAGING REVENUE

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LISTENER™ DIGITAL DATA

A convenient and inexpensive option to connect advertising revenue and site traffic data by user and content.

Enables cross-functional analytics to grow advertising audience and content revenue.

LISTENER™
DIGITAL DATA

Listener™ is a tagging solution that places JavaScript and other code into the applications running on a web page so that the data from the ad server, video player, paywall, and content-management system are captured simultaneously.

With Listener data, a set of business rules can be developed for content access that maximize the expected digital revenue (both advertising and audience revenue) from a customer.

TECHNOLOGY OVERVIEW

INGESTION

Listener's javascript tags track data from your website, paywall, and ad server. Listener™ can also integrate your offline data.
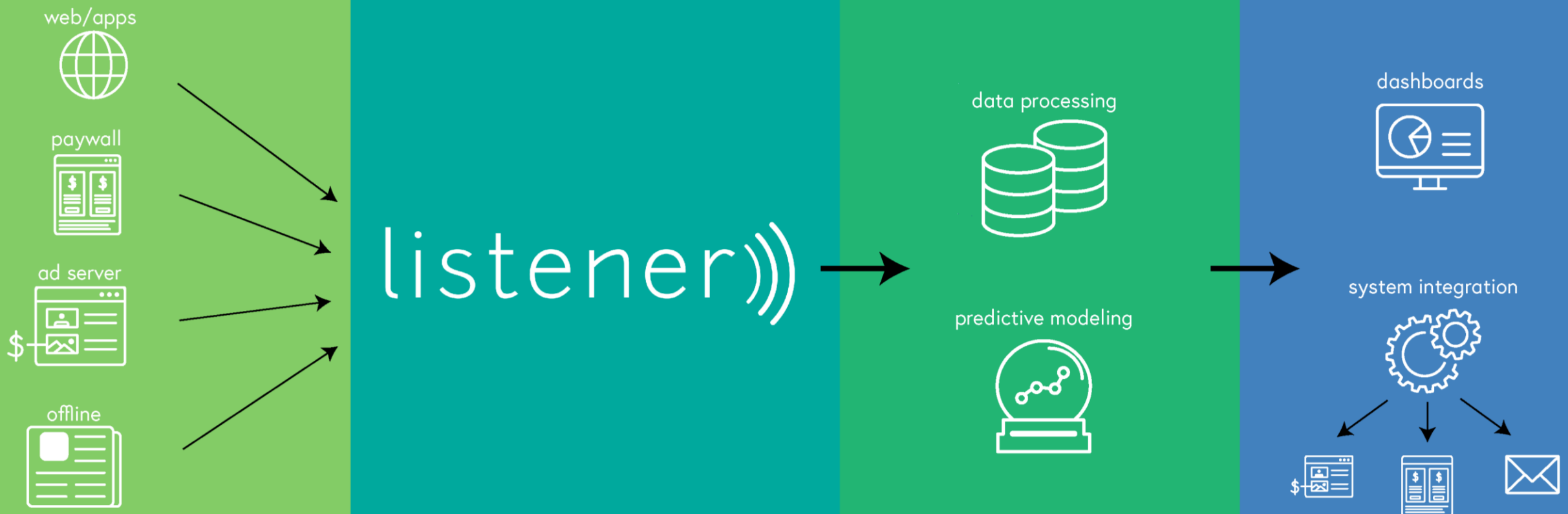
LISTENER™

Listener™ collects data from digital customer activity to grow audience engagement, build subscriber revenue, protect and improve advertising revenue and publish the right mix of content for your digital properties.

DATA ANALYSIS & REPORTING

The Listener™ team then processes and analyzes your data.

OUTPUT

After analysis and processing, the data is put into dashboards. It can also be integrated into your paywall, ad server and email systems.

web/apps

paywall

ad server

offline

listener))))

data processing

predictive modeling

dashboards

system integration

INTELLIGENT PAYWALL™

Combined with the Listener™ Data Platform, any paywall can become an Intelligent Paywall™.

Users are targeted with the right offers, messaging at the right time to maximize net revenue.

Segments include user behaviors such as content preference, engagement levels, propensity to buy, and advertising value.

The segments are integrated directly into the paywall system in real-time as long as the Listener JS is able to load in time for the paywall script to read the segments.

ENVIRONMENTAL
- Device
- Referral
- Region
- Time

CONTENT
- Article Content

USERS
- Propensity
- Engagement
- Content Preference
- Ad Value

Listener™ collects data from unique users who visit a website. These users are then segmented based on environmental, content, and user behaviors.

Desktop
Evening
News
High Ad Value
Local

Mobile
Afternoon
Sports
Low Ad Value
Non-Local

Users are assigned **segment names** that are stored in the Mather cookie which can be read by a paywall system (or ad server, DMP…etc.). The segments can be used directly within the paywall system to enable an Intelligent Paywall ™ and dynamic meter.

Desktop

Evening   News

High
Ad Value   Local

Price: m_P10_D10   = $10, 10% discount
Message: m_CB1   = Journalism Value
Product: m_OSUG   = Sun+Dig
Meter: m_M08   = 8 articles

Mobile

Afternoon   Sports

Low
Ad Value   Non-Local

Price: m_P15_D20   = $15, 20% discount
Message: m_CD3   = March Madness
Product: m_ODIG   = Dig-Only
Meter: m_M03   = 3 articles

Dashboard

Campaigns

Dynamic
Metering
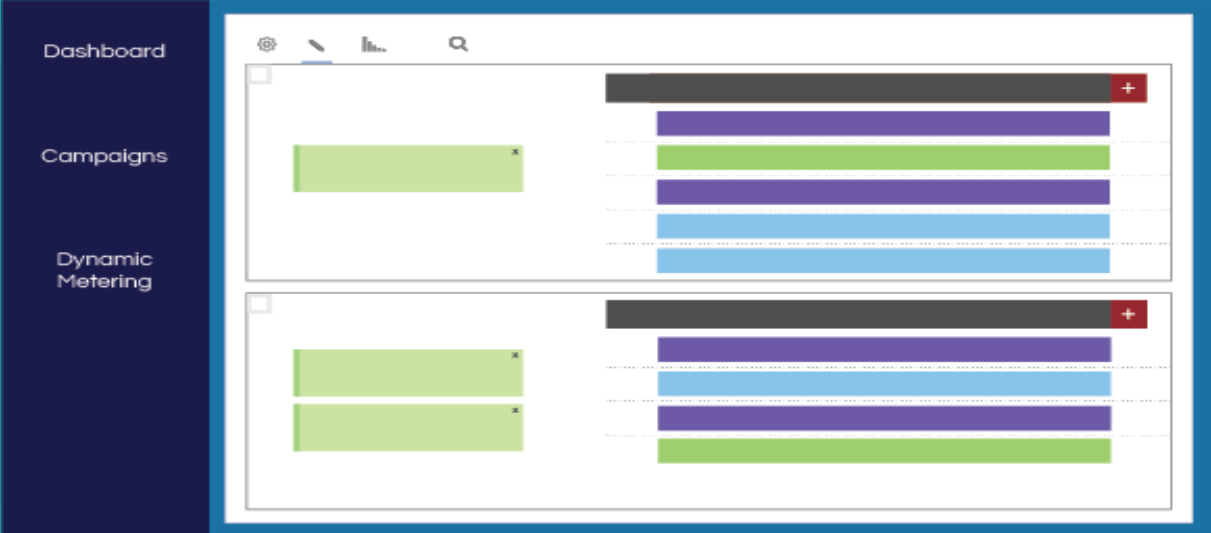
There is some initial setup within the paywall system to build creatives, prices, products, and messaging.

Once that has been set up, experiences can be created for any combination of these "levers" for targeting.

Assigning a combination of Mather segments associated with each unique experience enables the intelligent paywall.

In real time, the segments are read by the paywall system and evaluated per user.

Based on the unique combination of segments, the right experience is selected to be presented to each user.

MASS PERSONALIZATION

Personalization of the customer journey across channels is the key to a robust and sustainable audience strategy.

Affecting **Engagement, acquisition,** and **retention** and setting goals for each of these three outcomes will depend on each customer's position and behavior within the journey.

Identifying the **channels** and **triggers** where each customer can be directly impacted will drive the execution of the strategy.
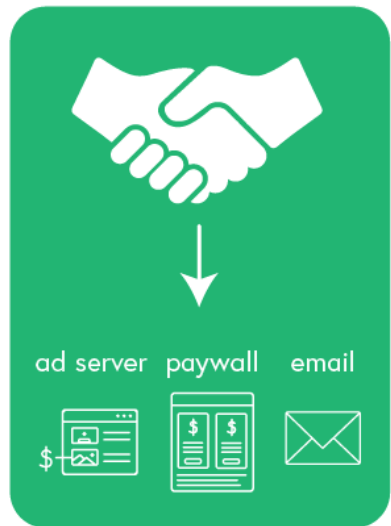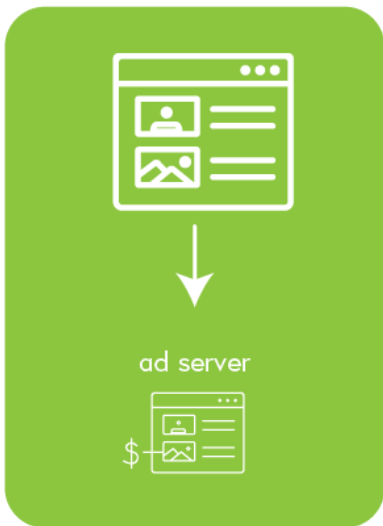
ENGAGEMENT

paywall   email

RETENTION

direct mail   call center   email

ACQUISITION
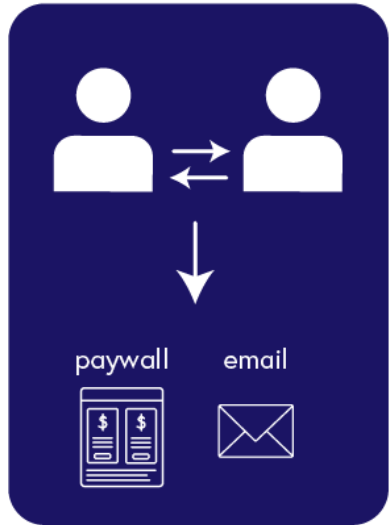
ad server   paywall   email
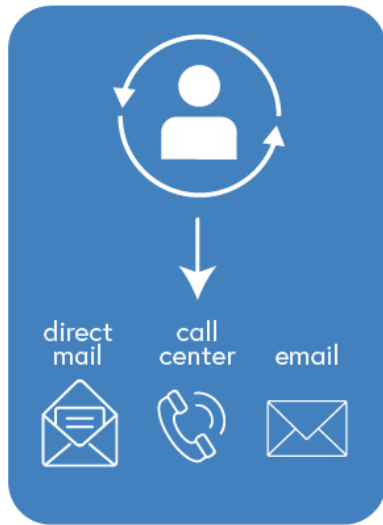
ADVERTISING

ad server

For example, to grow subscriber acquisition, you can use the paywall to set the right meter level, use email to set the right price for non-paid newsletter users, and the ad server to promote subscriptions using house inventory.

Send a Customized Email

Enable an Intelligent Paywall

Target with House Ads
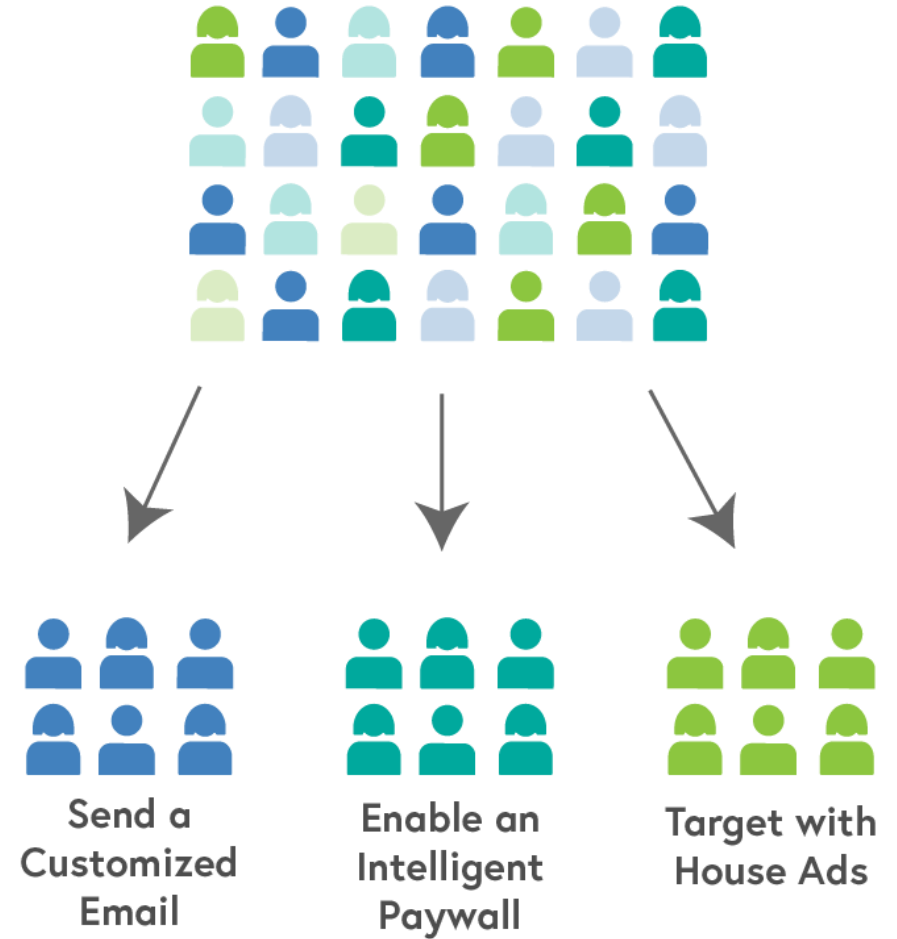
ACTIVE USER SEGMENTS BY MARKET

FLYBYS

74%

Roughly 74% of users are usually flybys. A Flyby typically provides **1 pageview/month,** but generates traffic through social media.

GOAL: convert flyby users into repeat visitors.

STABLE USERS

10%

Stable Users make up roughly 10% of users. A Stable User typically has **5 pageviews/month** and **2-3 article pagviews/month.** These users are repeat visitors.

GOAL: collect email address via registration.

FANATICS

2%

Roughly 2% of users are Fanatics. A Fanatic has roughly **30 pageviews/month** in over 5 content areas. **20%** of Fanatics are already registered.

GOAL: convert and retain subscribers.

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TOTAL AUDIENCE BY ENGAGEMENT GROUP

The most engaged users generate over $2.00 in ad revenue per month.

	FANATICS	ENTHUSIASTS	STABLE USERS	DABBLERS	FLYBYS	NON-ENGAGED
ALL USERS	1,694,309	2,866,613	4,620,957	833,137	27,880,563	22,861,077
PAGE VIEWS	109.89	18.26	8.36	4.07	1.87	1.1
ARTICLE PG VIEWS	61.16	11.99	5.72	2.53	1.1	0.55
UNIQUE DAYS	13.86	4.51	2.2	1.54	1.1	1.1
VISITS PER USER	26.51	5.83	2.64	1.76	1.21	1.1
TIME PER VISIT	7:07	7:23	6:33	4:43	2:09	0:00
SCROLL DEPTH	55%	51%	52%	52%	40%	2%
AD REVENUE	$2.31	$0.32	$0.12	$0.04	$0.02	$0.01

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MARKET BASED PRICING DATA REQUEST

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OPPORTUNITY ASSESSMENT

Market Based Pricing Opportunity Assessment – **No** cost or obligation

In order to complete an initial opportunity assessment, Mather will need an extract from your subscriber database, including:

- Hashed/Pseudonymized Unique subscriber id#
- Service level (FULL Service, Weekend + Digital, etc.)
- Period or term
- Customer status (active, vacation, stopped…etc.)
- Original start date
- Expire date
- Subscription Price Point
- Postal code
- Auto-pay status (Payment method)

Mather can then estimate the opportunity and come back to you after a few weeks with potential results and impacts that we believe are achievable for your business.

DATA TRANSFER AND REPORT GENERATION

Typical Market Based Pricing Process
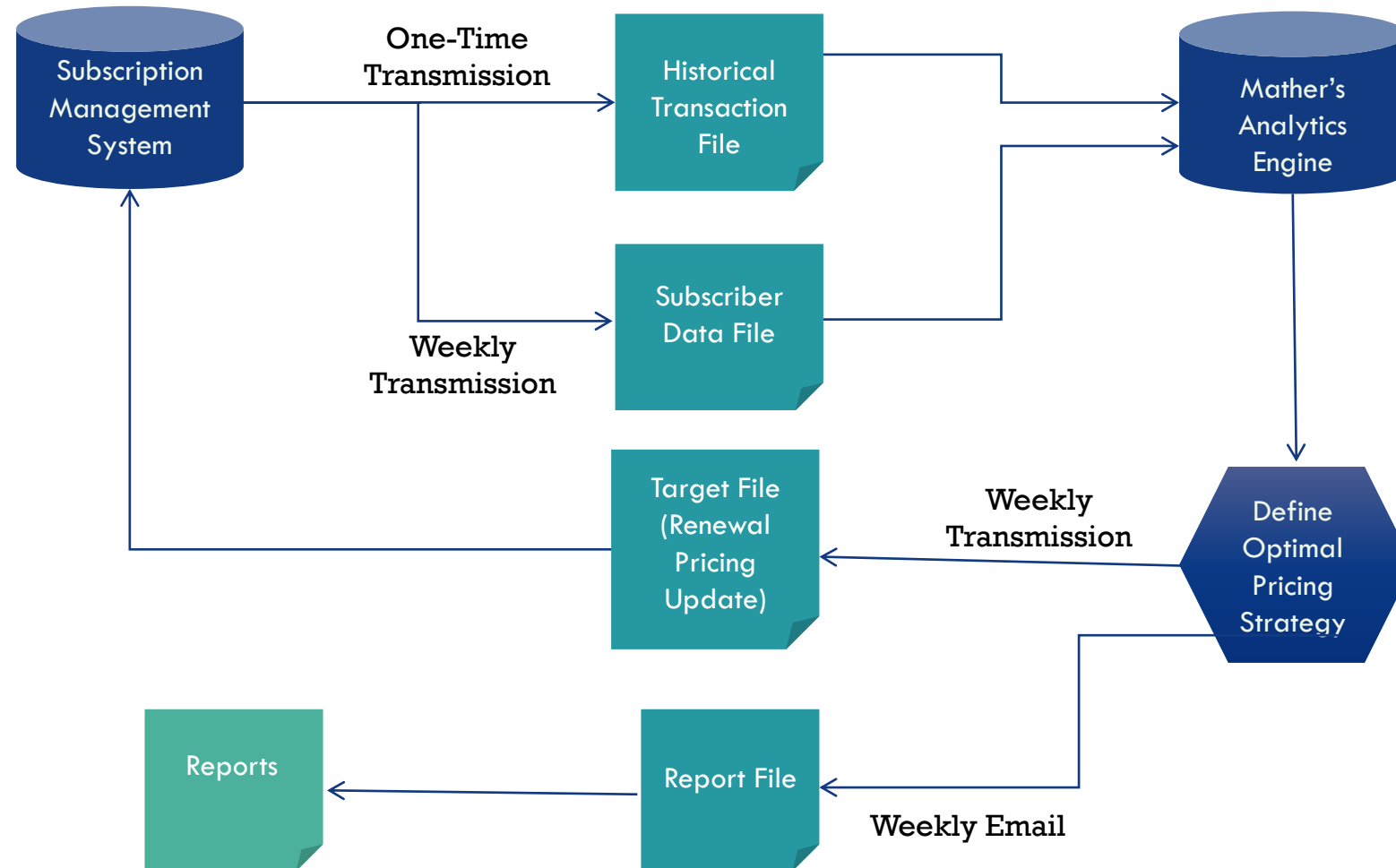
GDPR REQUIREMENTS

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PSEUDONYMIZATION

Article 4(5) of the GDPR defines **pseudonymization** as

"the processing of personal data in such a way that the data can no longer be attributed to a specific data subject without the use of additional information." By holding the **de-identified** data separately from the "additional information," the GDPR permits data handlers to use personal data more liberally without fear of infringing the rights of data subjects. This is because the data only becomes identifiable when both elements are held together.

| ~~Account Number~~	New (Hashed ID)
~~12345678~~	ab1c3d4e9fgh5

CONSENT

Article 22 states the following:

1. The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.

2. Paragraph 1 shall not apply if the decision:

(a) is necessary for entering into, or performance of, a contract between the data subject and a data controller;

(b) is authorized by Union or Member State law to which the controller is subject, and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests; or

(c) is based on the data subject's explicit consent.

GDPR ACTION ITEMS

- EU Standard Contractual Clauses (Data Processing Agreements)

- Privacy Shield

- Pseudonymization (De-identified data)

- Consent
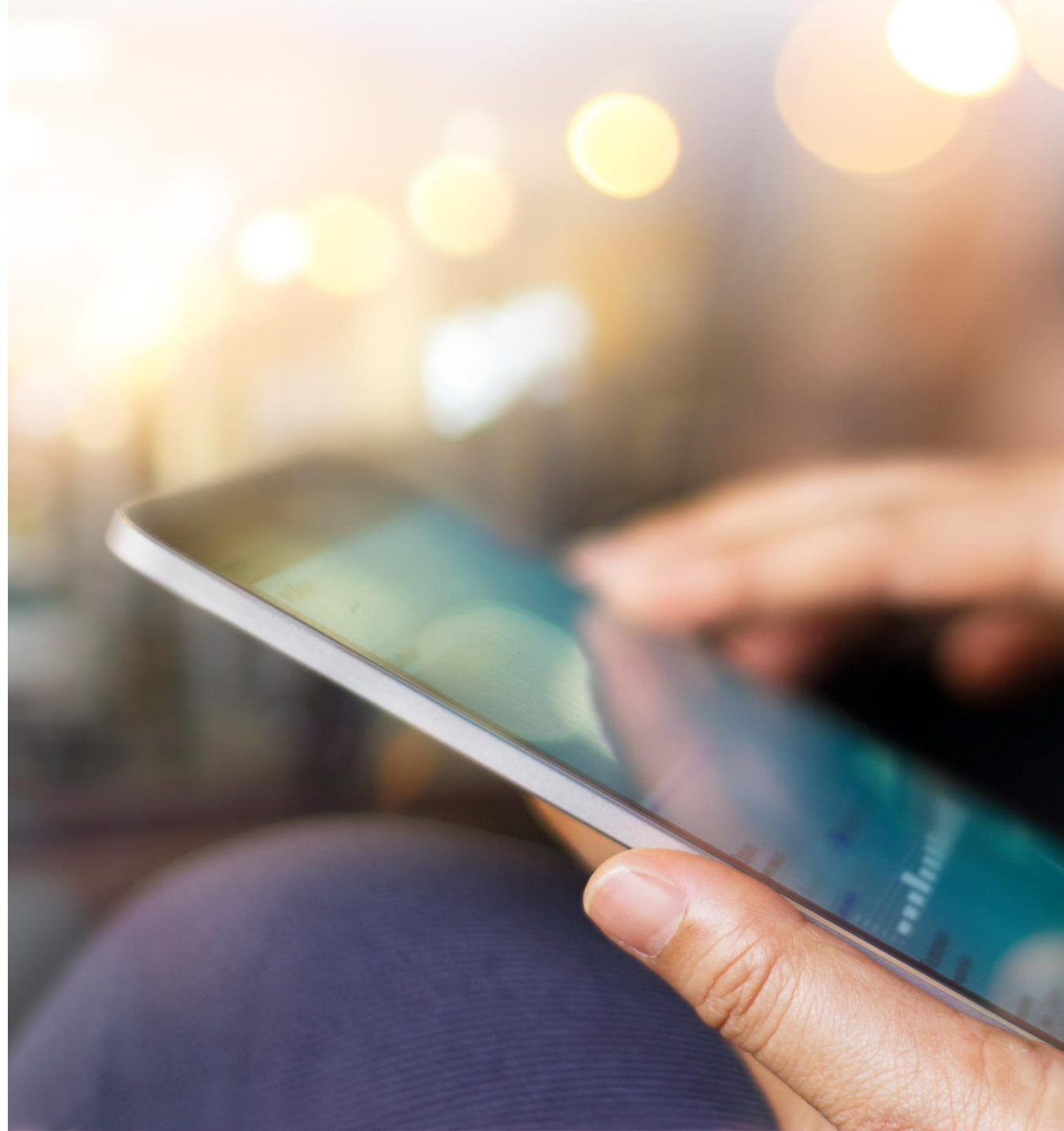
OUR TEAM

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EXECUTIVE LEADERSHIP TEAM

Matt Lindsay
President

Bob Terzotis
Executive Vice President

Arvid Tchivzhel
Sr. Director
Product Development

Dustin Tetley
Sr. Director
Consulting Services

Matthew Lulay
Sr. Director
Consulting Services

mather:

PRESIDENT'S BIO

Matt Lindsay, Ph.D.
President

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Matt Lindsay is the President of Mather Economics, a business consulting firm based in Atlanta. Matt has over 25 years of experience in helping businesses increase operating margins and grow revenue through economic modeling and analytics. In a consulting role over the past 19 years, he has shared this expertise and developed pricing strategies and predictive analytics models for clients including the Intercontinental Exchange, Gannett, The Home Depot, NRG Energy, Tribune, IHG, McClatchy, the Walton Foundation, Coca Cola, UPS, Dow Jones, Chick fil-A, Clorox, Scientific Games, The Georgia Lottery and The New York Times.

Matt began his career with the corporate Economics Group of United Parcel Service measuring price elasticity and marginal network costs to improve profitability by customer. Prior to founding Mather Economics, Matt worked with Arthur Andersen in the firm's Atlanta strategy practice. His extensive experience in marketing spend effectiveness optimization, customer retention, analysis and predictive models have been used to support strategic pricing decisions, marketing initiatives and customer acquisition tactics, ultimately generating millions of dollars in incremental profits for his clients.

Mather Economics, one of Inc. Magazine's 5000 fastest growing US companies for the past 3 years, works with hundreds of clients to strengthen business performance through customer analytics. In the highly disrupted publishing sector, Mather manages over $4 billion in client revenue and receives data on over 30 million households each week. Mather has recently launched a digital data capture tool called Listener™ that combines hardware, software, and analytics to provide actionable recommendations at a customer level.

In 2017, Matt authored *How to Succeed in The Relationship Economy*. It is published in three languages—English, Dutch and German and available to purchase on Amazon.com.

Matt holds a Doctorate in Economics from the University of Georgia, a Master of Applied Economics from Clemson University and an undergraduate degree in Economics from the University of Georgia.

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HOW TO SUCCEED IN THE RELATIONSHIP ECONOMY
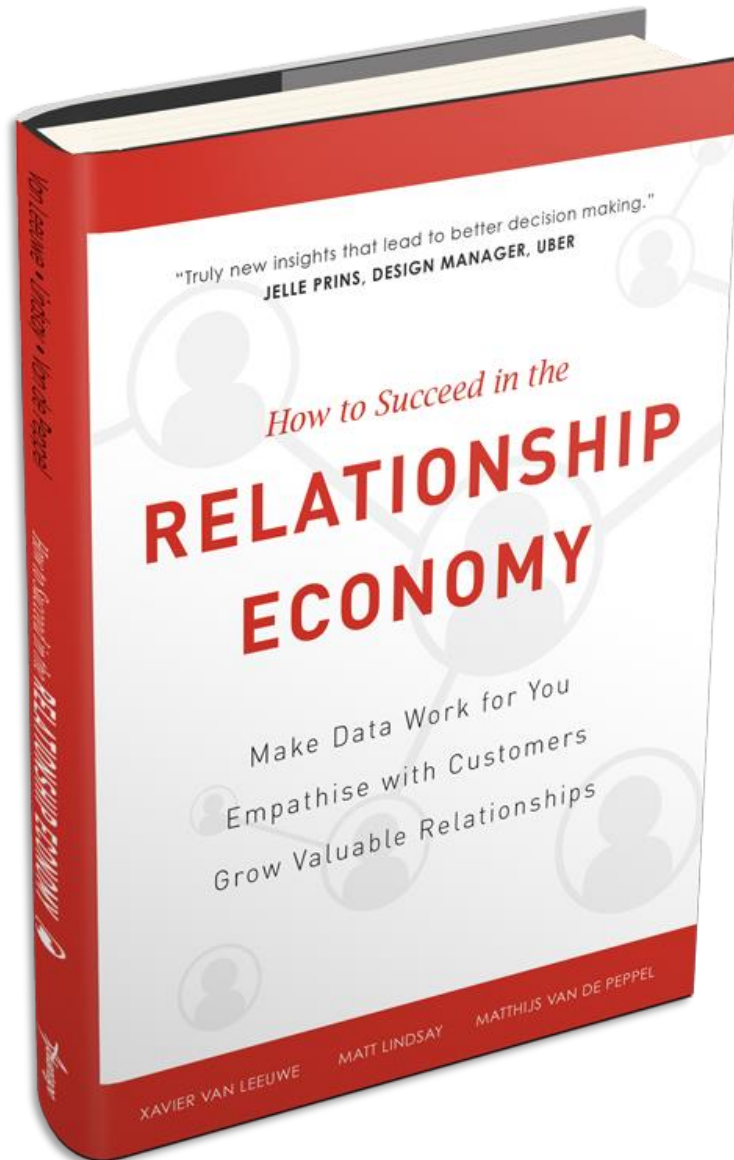
Learn how to make data work for you, grow valuable relationships, and empathize with your customers.

By Matt Lindsay, President

Published in English, Dutch and German.
Available to purchase on Amazon.com

ACCOLADES

BIGGIES GLOBAL AWARDS 2019

1st PLACE
Excellence in Data Strategy
Transformative Economics of Content

1st PLACE
Excellence in Predictive Analytics
Make Your Paywall an Intelligent Paywall™

May 2019 | San Francisco

BIGGIES EUROPE, MIDDLE EAST & AFRICA 2018 Awards LONDON

AWARD of EXCELLENCE
Data-Driven Business Process Efficiency
Sales Intelligence Platform

AWARD of EXCELLENCE
Data Strategy
Sales Intelligence Platform

November 2018 | London

BIGGIES GLOBAL AWARDS 2018

1st PLACE
Excellence in Data-Driven Technology
Listener™ Intelligent Paywall™

AWARD of EXCELLENCE
Creativity in a Data-Driven Project
Advertising Rate Calculator Dashboard

May 2018 | New York City

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