

# THE INFORMS ANALYTICS FRAMEWORK

INFORMS Annual Meeting

Atlanta, GA

October 2025



Smarter Decisions  
for a Better World

# THE INFORMS ANALYTICS FRAMEWORK...

In general

In  
industry

In  
academia

In your  
life



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# THIS WORKSHOP

## Part 1

- Overview of the IAF
- 1:15 to 2:30 pm

## Part 2

- Workshopping ideas for using the IAF
- 2:45 to 4:00 pm

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# INTRODUCTIONS

Volunteers

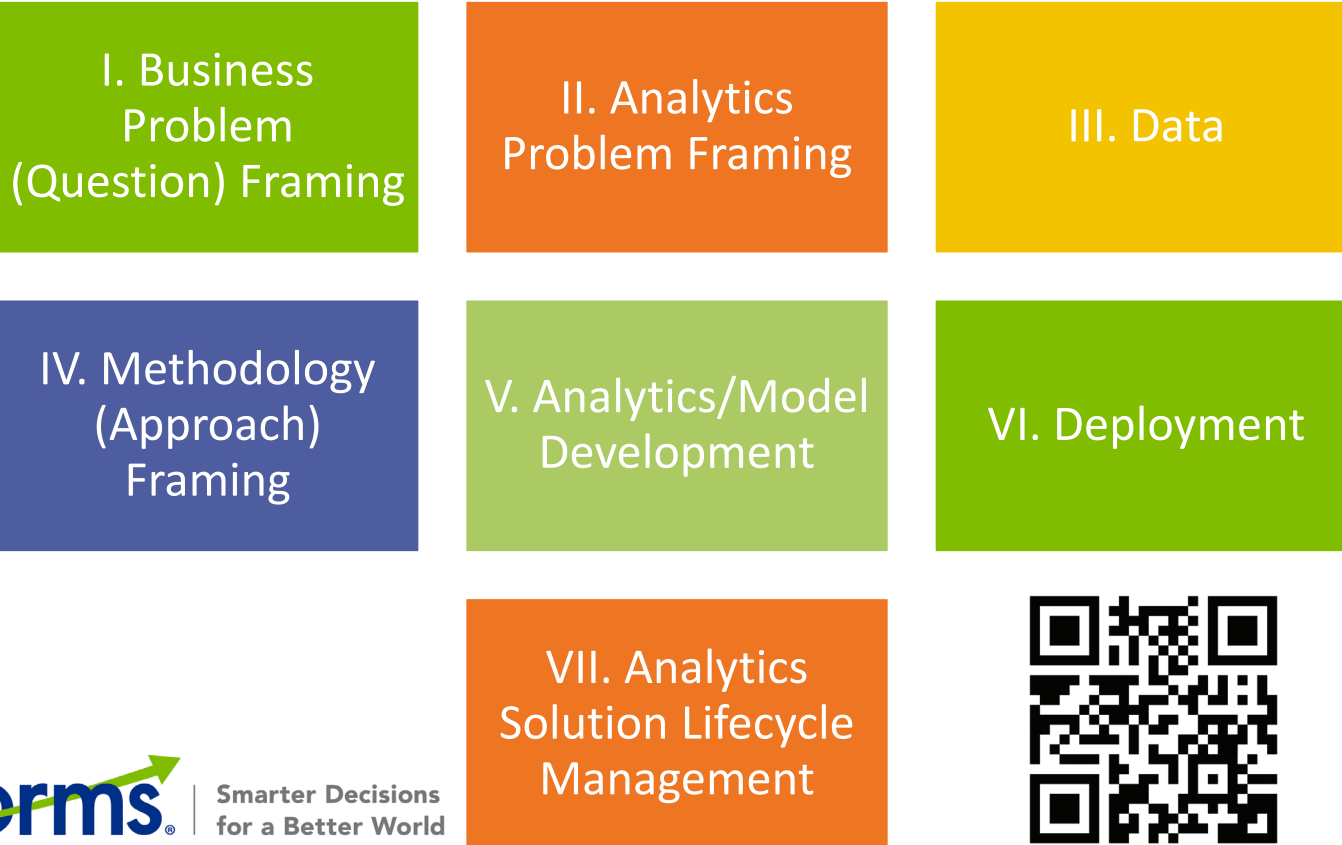
INFORMS  
Staff

Participants



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# THE INFORMS ANALYTICS FRAMEWORK



# THE INFORMS ANALYTICS FRAMEWORK

2013  
CAP Framework



2024  
INFORMS Analytics  
Framework

## Experienced professionals

- Johan Bos-Beijer
- Shannon Browning
- Arnie Greenland
- Mehran Hojati
- Irv Lustig
- Thor Osborn
- Zohar Strinka
- Nick Ulmer



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# THE INFORMS ANALYTICS FRAMEWORK

I. Business  
Problem  
Framing

II. Analytics  
Problem Framing

III. Data

NOT  
LINEAR

IV. Technology  
(Approach)  
Framing

V. Analytics/Model  
Development

VI. Deployment

VII. Analytics  
Solution Lifecycle  
Management



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**"T-Shaped"  
Professionals**

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# I: BUSINESS PROBLEM (QUESTION) FRAMING

- Develop an initial statement
- Identify all stakeholders and their perspectives
- Is the question friendly to an analytics solution?
- Refine the statement
- Create an initial business case
- Obtain stakeholder alignment



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# I: BUSINESS PROBLEM (QUESTION) FRAMING

[Join](#)[Donate](#)[Member Log](#)

[Home](#) > [Professional Development](#) > [Professional Development Classes](#) > [INFORMS Business Problem Framing](#)

## INFORMS Business Problem Framing

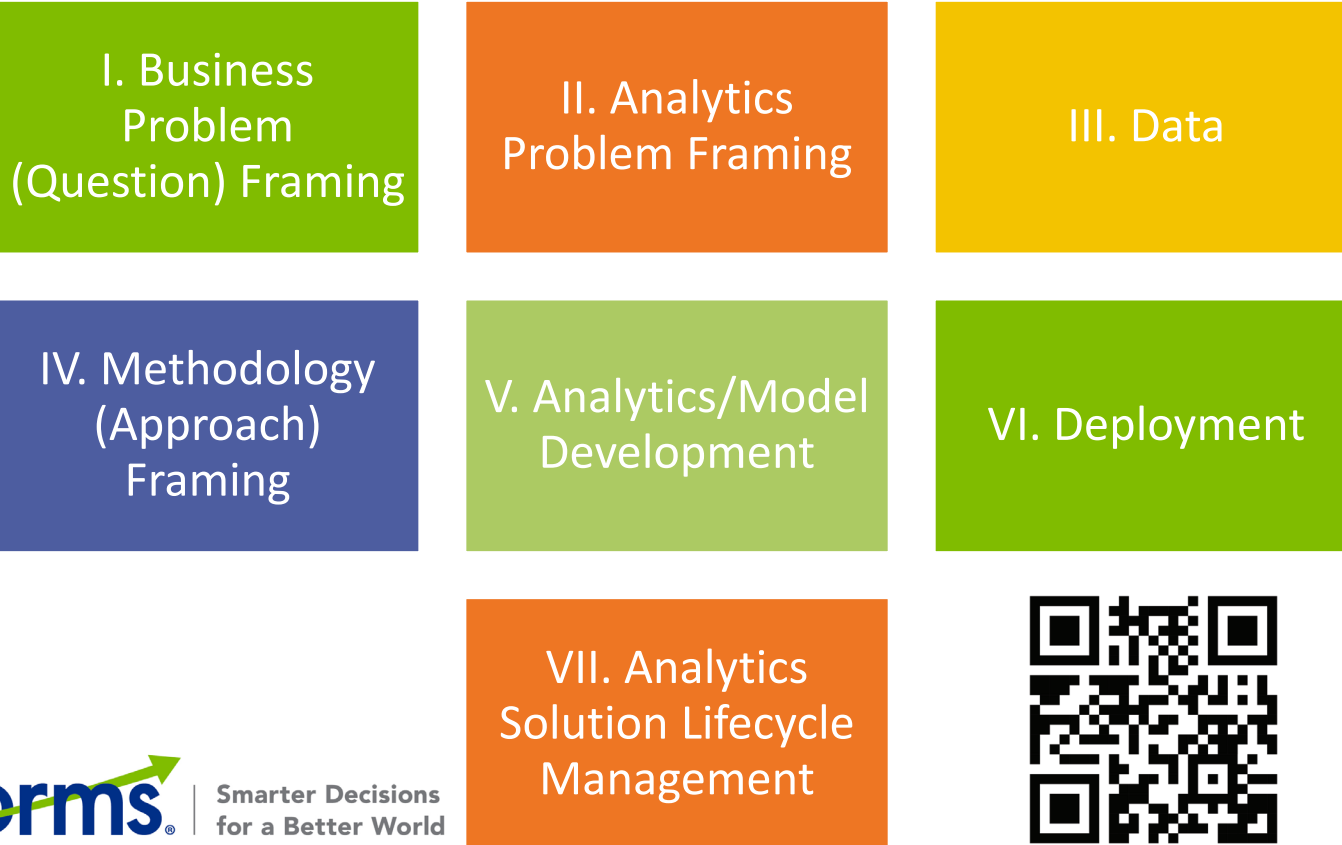
Before you can solve a problem, you need to define it clearly. *Business Problem Framing* is a foundational course that teaches you how to ask the right questions, align stakeholders, and set the stage for effective analytics work. Whether you're preparing for the CAP® exam or leading data-driven initiatives, this course helps you build the critical thinking and strategic clarity needed to turn complex business challenges into actionable analytics problems.

[Register Now for Business Problem Framing](#)



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# THE INFORMS ANALYTICS FRAMEWORK



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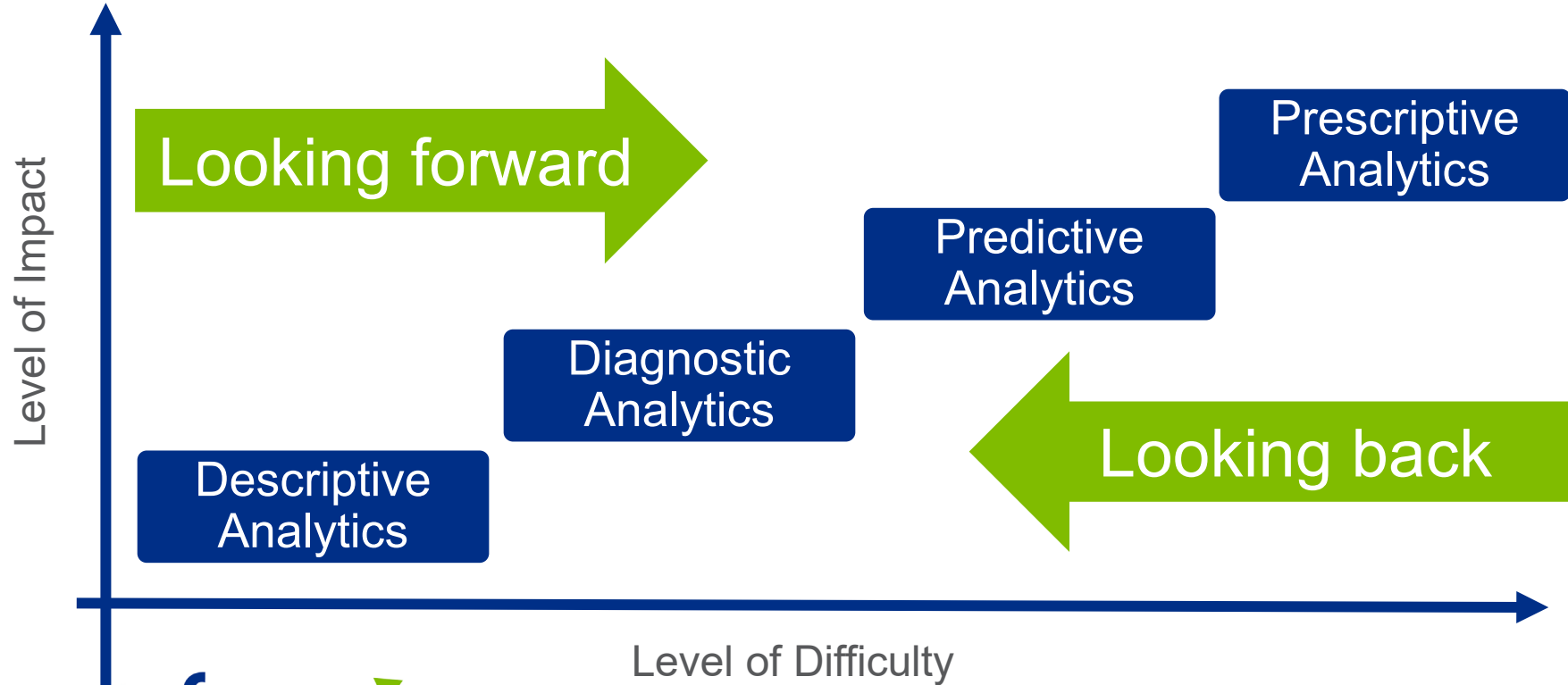
## II: ANALYTICS PROBLEM FRAMING

- Reformulate the business problem statement as an analytics problem statement
- Propose potential inputs and outputs
- State your assumptions
- Define primary measures of success
- Identify baseline performance
- Identify risks and mitigation strategies
- Obtain stakeholder alignment



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## II: ANALYTICS PROBLEM FRAMING



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CYA



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# III: DATA

- Identify data needs
- Identify data sources
- Create a data management plan
- Acquire data
- Prepare data
- Assess data quality
- Document data findings
- Validate the problem statements



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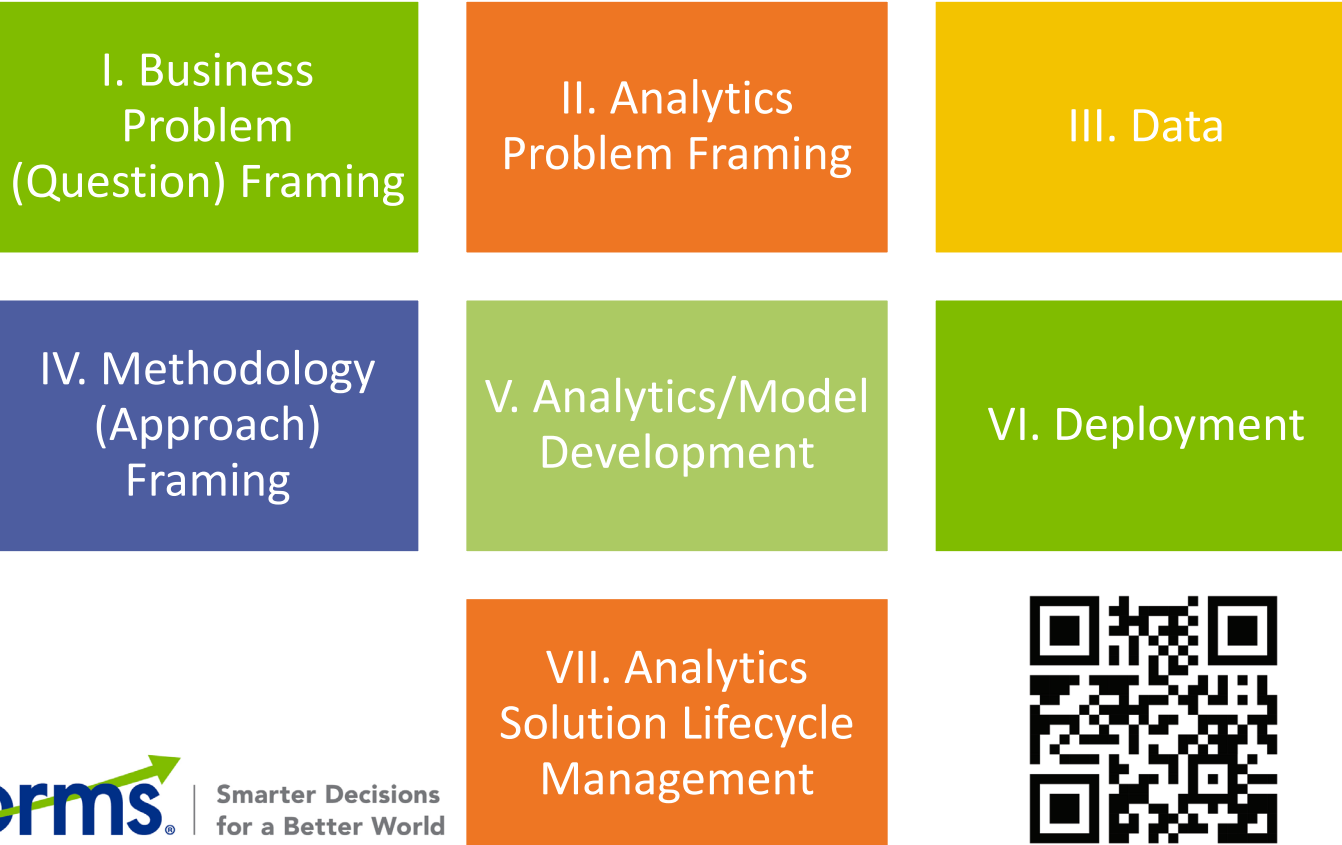
# III: DATA

Hey analyst, I need  
you to look into this  
problem. Here's  
data for it!

<asks questions  
about the data>

Uhh.....

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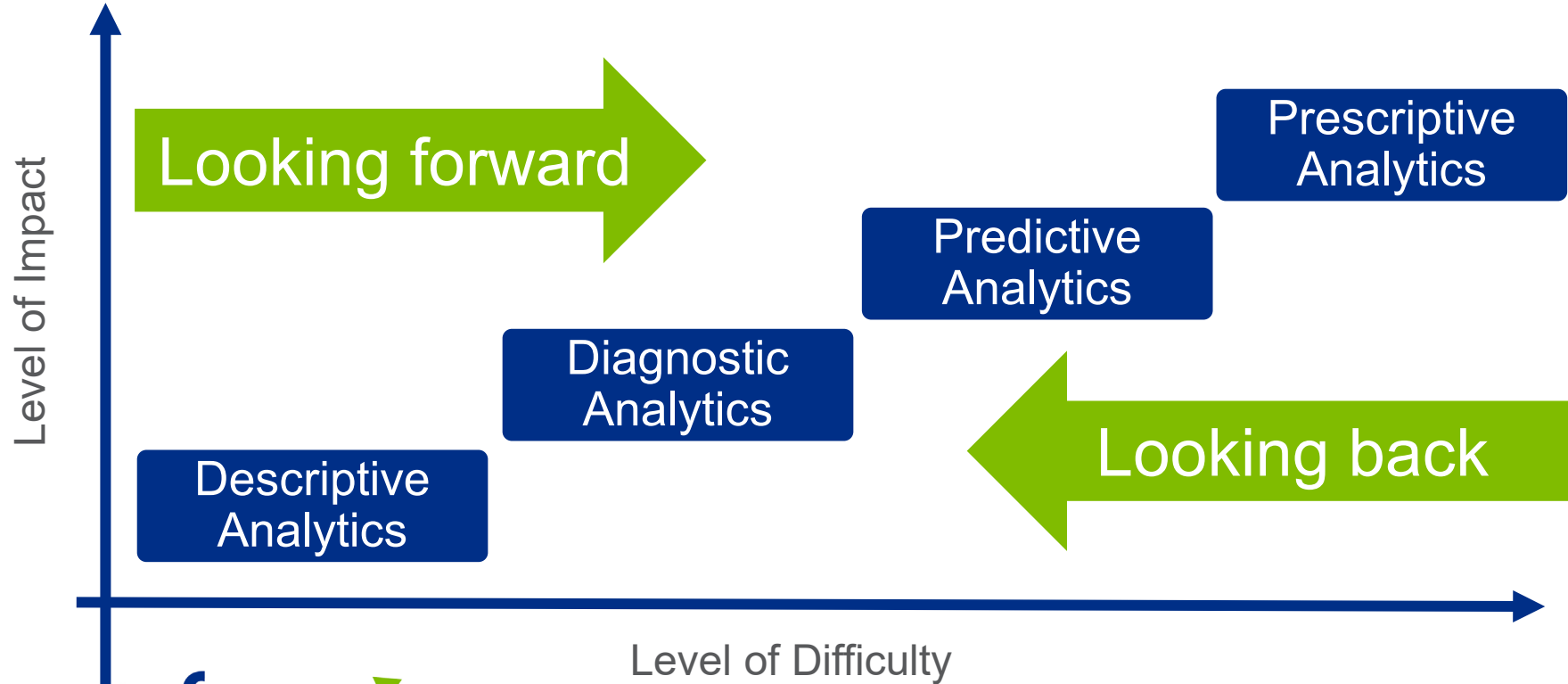


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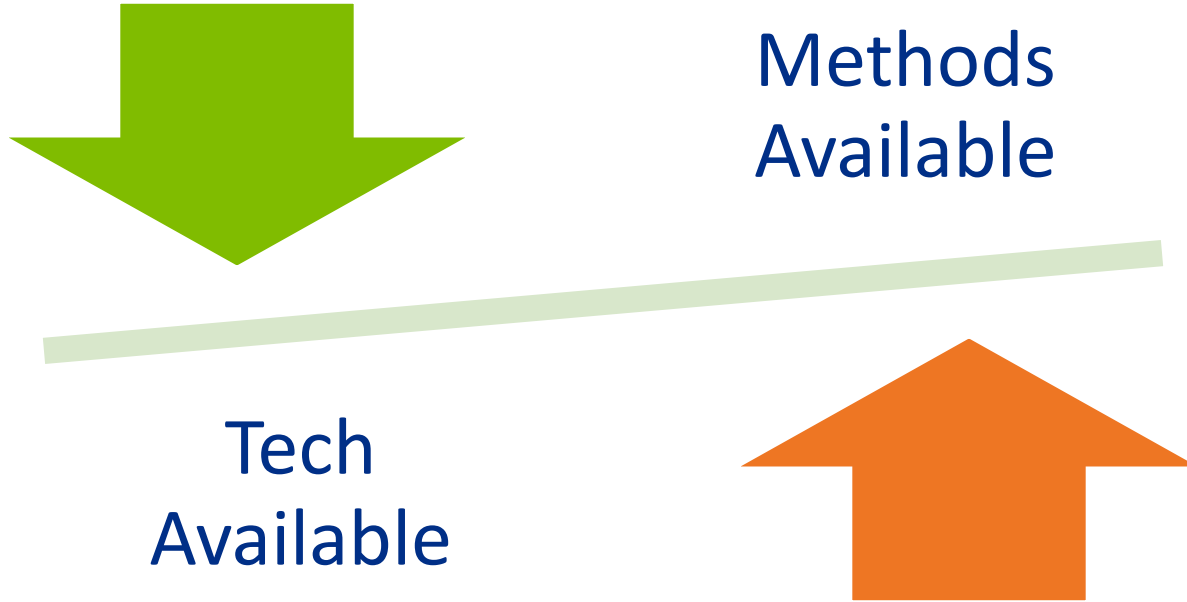
## IV: METHODOLOGY SELECTION

- Determine appropriate methods
- Evaluate methods
- Understand the technical solution architecture
- Evaluate the tech stack

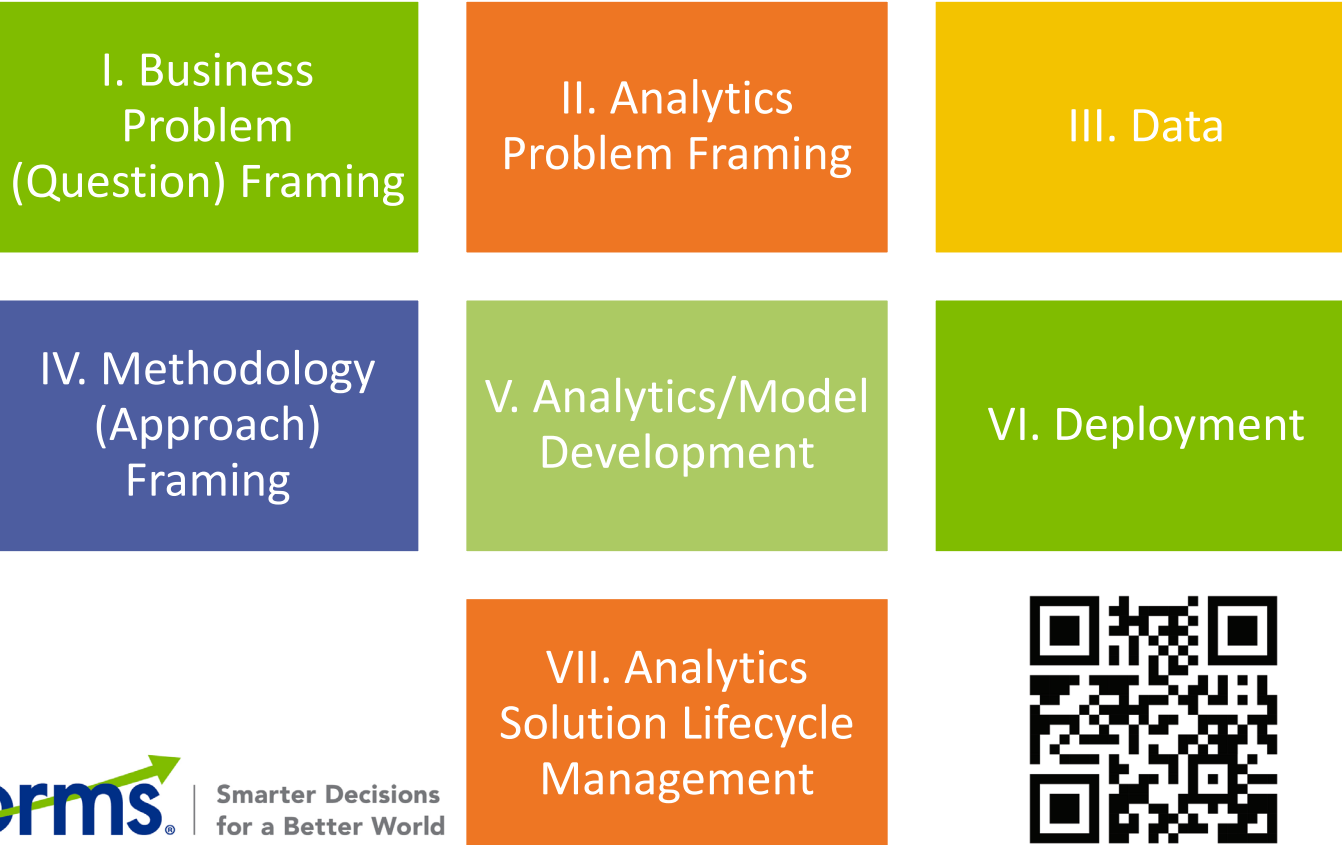
# IV: METHODOLOGY SELECTION



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# V: MODEL BUILDING

- Design the model structure
- Build appropriate model(s)
- Run the model
- Calibrate model
- Combine multiple models, if needed
- Document model findings



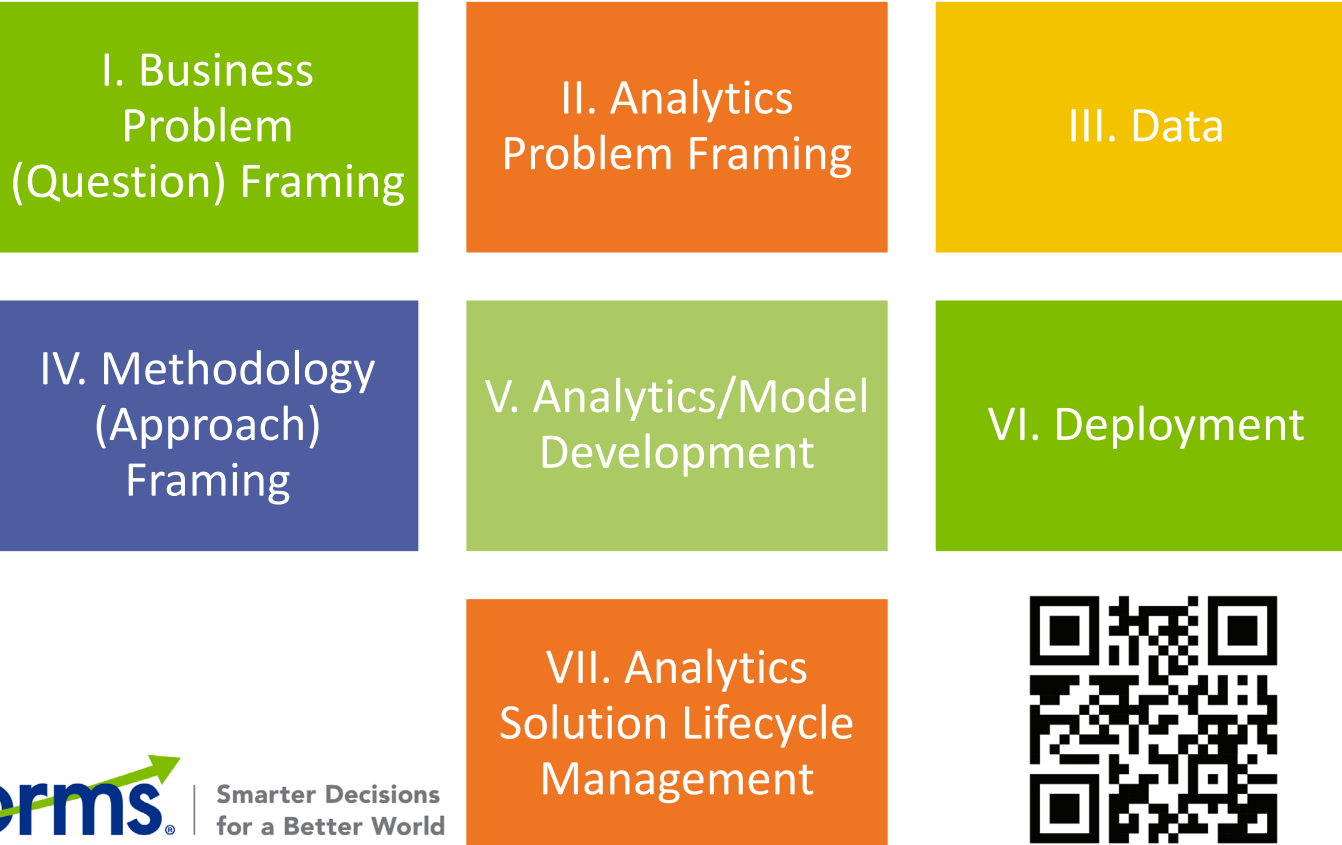
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# V: MODEL BUILDING



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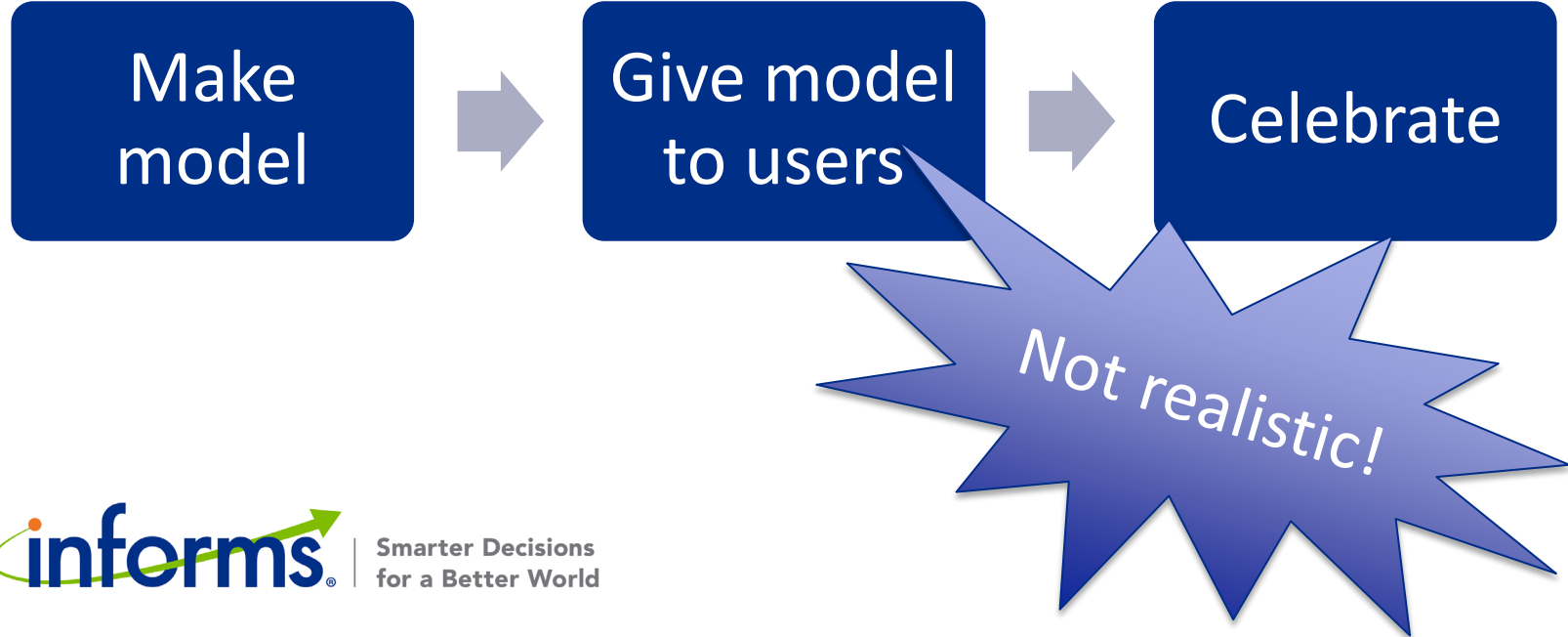
## VI: MODEL DEPLOYMENT

- Perform business validation of the analytics solution
- Deliver business validation report
- Obtain stakeholder alignment
- Create requirements for a deployed solution
- Support the implementation
- Support deployment validation

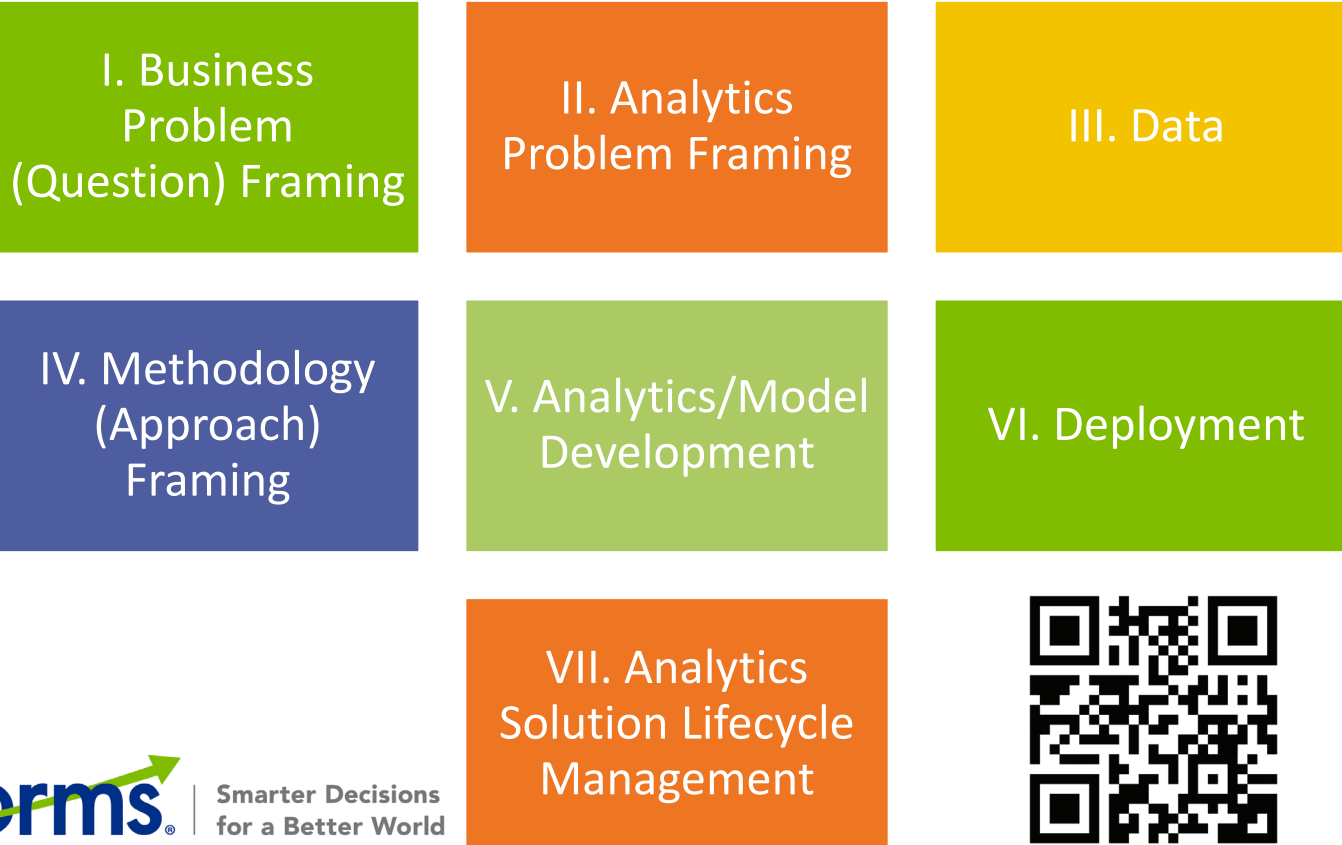


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# VI: MODEL DEPLOYMENT



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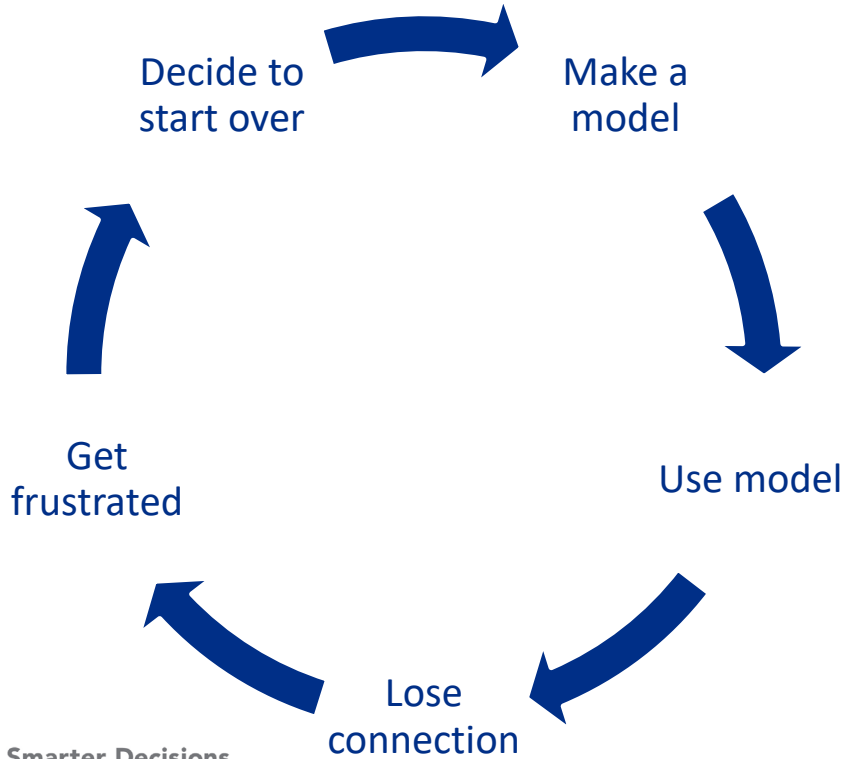
## VII: LIFECYCLE MANAGEMENT

- Track performance
- Maintain the solution
- Support training activities
- Validate the business over time
- Analyze side effects
- Maintain documentation



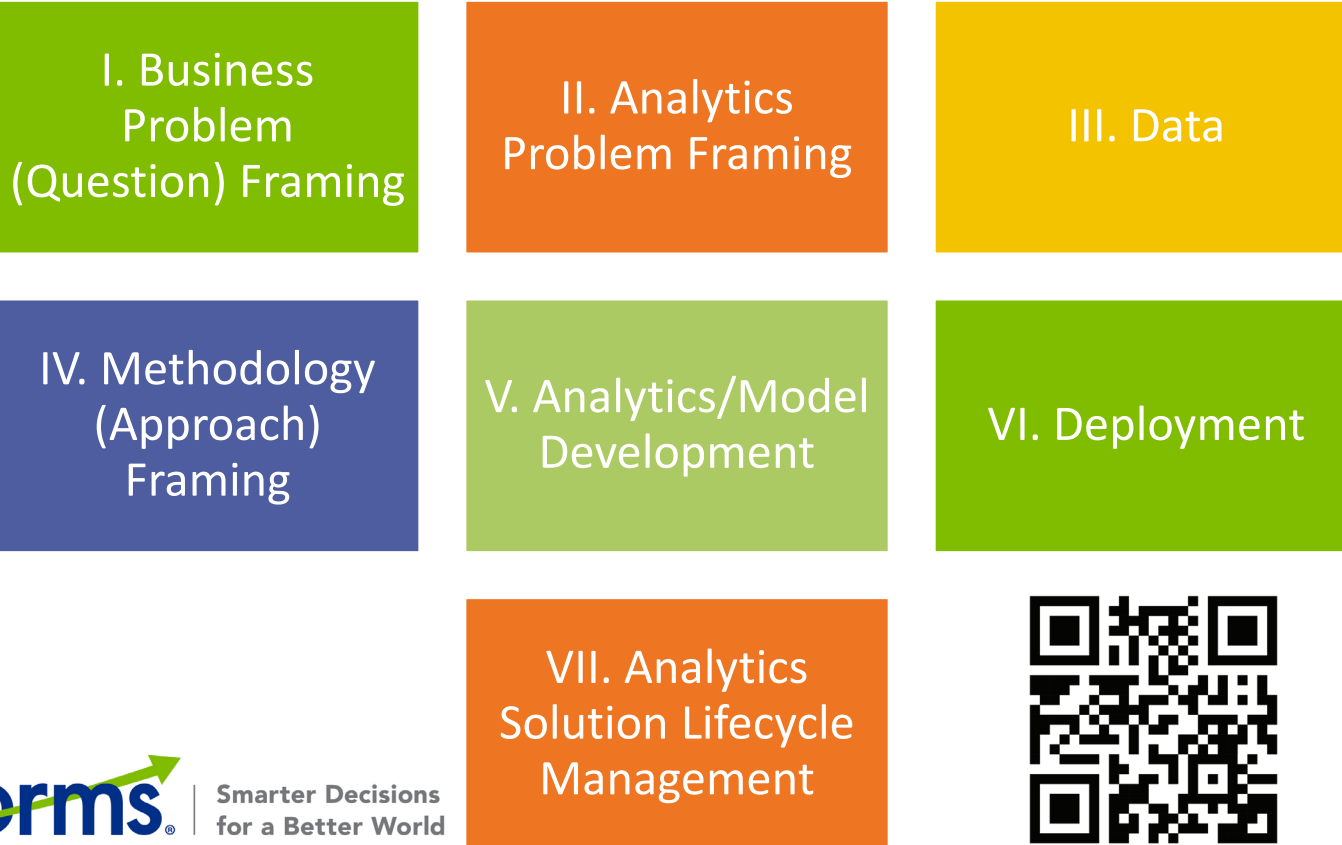
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# VII: LIFECYCLE MANAGEMENT



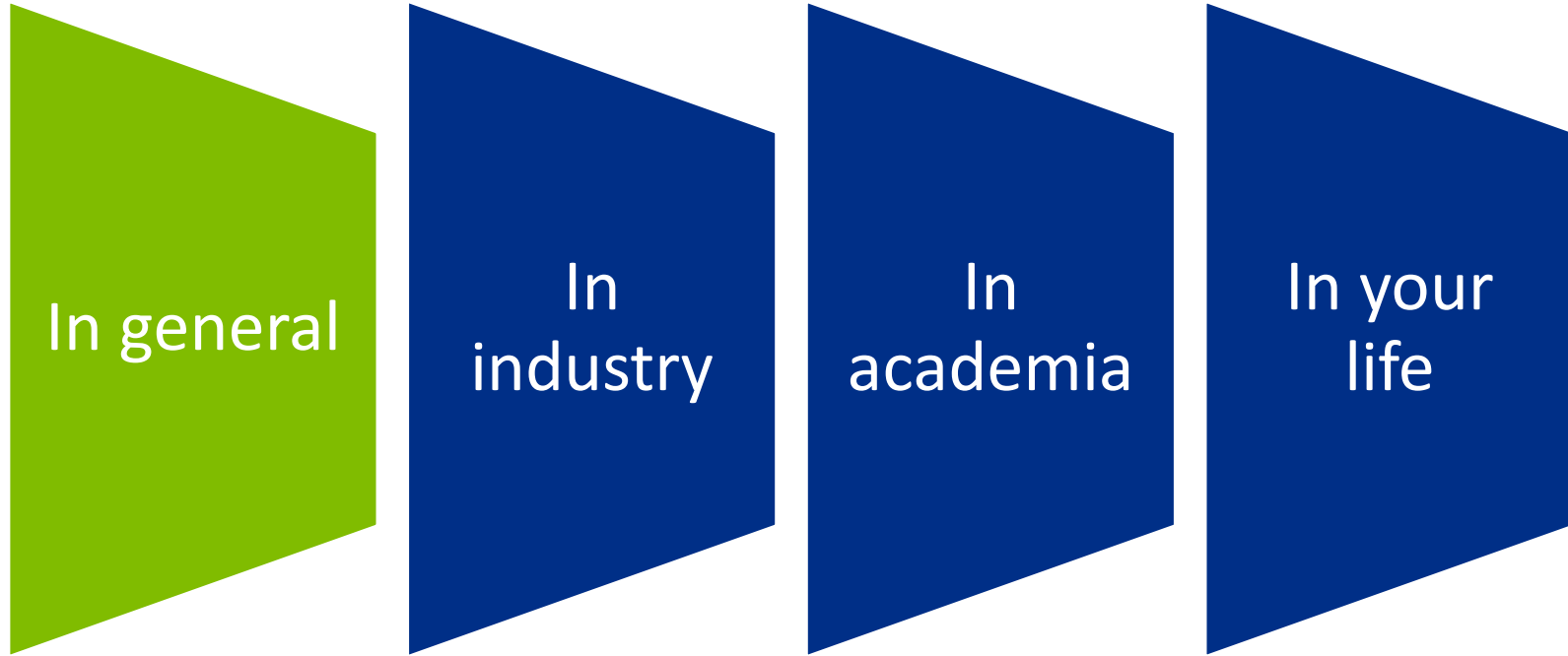


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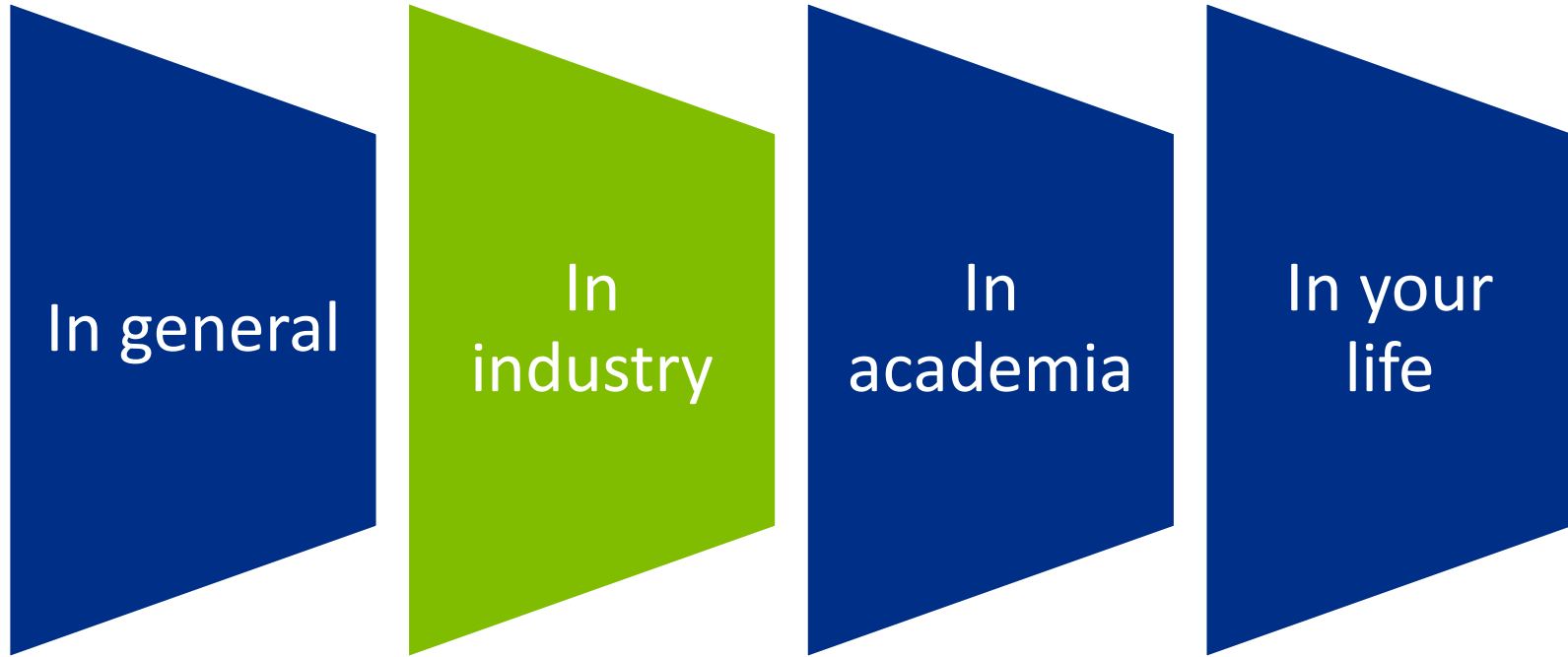


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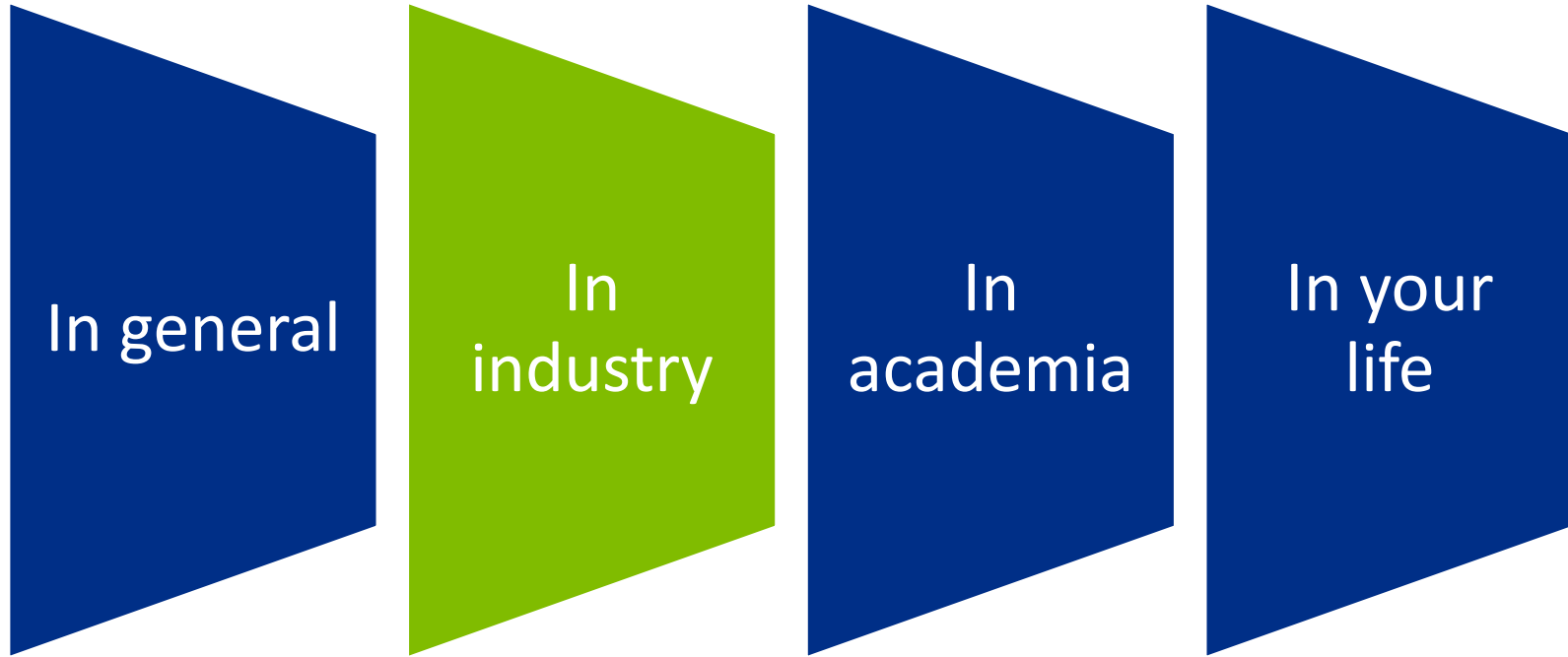
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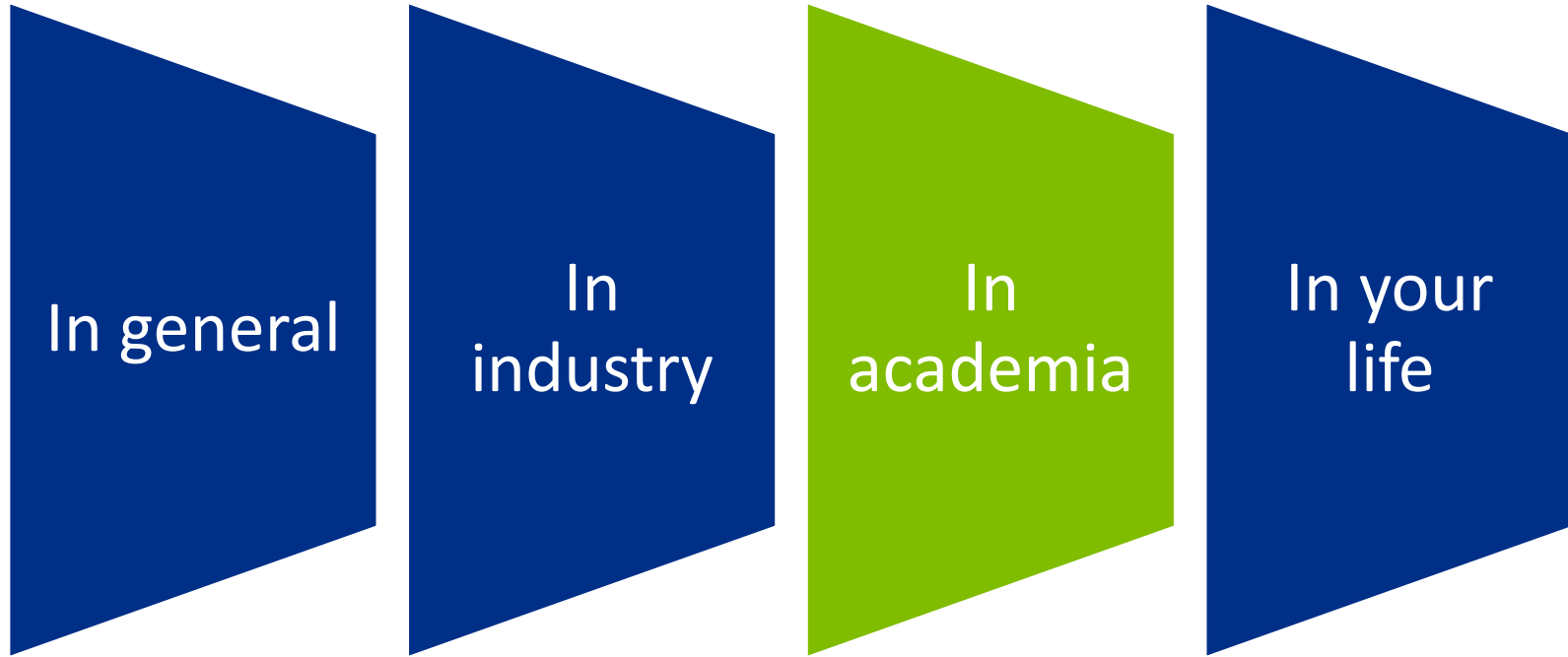


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# IAF IN ACADEMIA

Two key opportunities for IAF in your program:

## 1. Course(s)

- Data Mining
- Predictive Analytics
- Prescriptive Analytics
- Optimization/Simulation

## 2. Capstone projects

"Process, Process,  
Process!"



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# IAF IN ACADEMIC TRADITIONAL COURSES

Taught and applied in:

## **Purdue University**

- MGMT 473/571 Data Mining (Undergraduate & Graduate Course)
- MGMT 690 Industry Practicum (Capstone)

## **Butler University**

- MS 365 Predictive Analytics

## **Monash University**

- Optimisation and Decision Analytics (Undergraduate & Graduate Course)

## **UC Davis**

- Course not specified but, had "about 10 in-class INFORMS extra credit activities that we used to walk students through podcasts, lectures, webinars, INFORMS listserv"



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# IAF IN ACADEMIC CAPSTONES

## Some examples:

- Johns Hopkins University
- Monash University
- Purdue University
- UC Davis
- University of Wisconsin
- Western Kentucky University

## Some ideas for you:

- Competitions (Rubrics follow IAF)
  - INFORMS Analytics+ Poster Session
  - National Data4Good Competition
  - Crossroads Classic Analytics Challenge
- Undergraduate Research Conference Posters (Purdue, Butler)



# HELP STUDENTS SHOWCASE THEIR IAF KNOWLEDGE

## aCAP Academic Pathways Program

"The **Associate Certified Analytics Professional (aCAP®)** designation awards new graduates an industry-recognized credential to help boost their resume, along with an INFORMS membership. Your university has partnered with INFORMS to offer this unique program for master's degree students to provide you with a competitive edge in the job market. Future employers will have peace of mind knowing that you not only have the requisite knowledge and skills acquired in your degree program but agree to uphold the highest ethical standards as outlined by the [CAP program](https://info.informs.org/acap-academic-pathway)."



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<https://info.informs.org/acap-academic-pathway>

# WHAT DO YOU SEE?

## Jane Smith

**Associate Certified Analytics Professional (aCAP®)**

West Lafayette, IN | 248-892-2113 | jsmith1@purdue.edu | linkedin.com/in/janesmith1/

### PROFILE

---

- Master's student seeking a position in sports analytics
- Strengths include analytical programming, mathematics, statistics, critical thinking, and communication
- Proficient in R and Excel; familiar with Python, SQL, and SAS
- Former college player enthusiastic about baseball and sabermetrics

### EDUCATION

---

**Purdue University, Krannert School of Management**

*Master of Science in Business Analytics and Information Management*

**West Lafayette, IN**

**May 2020**

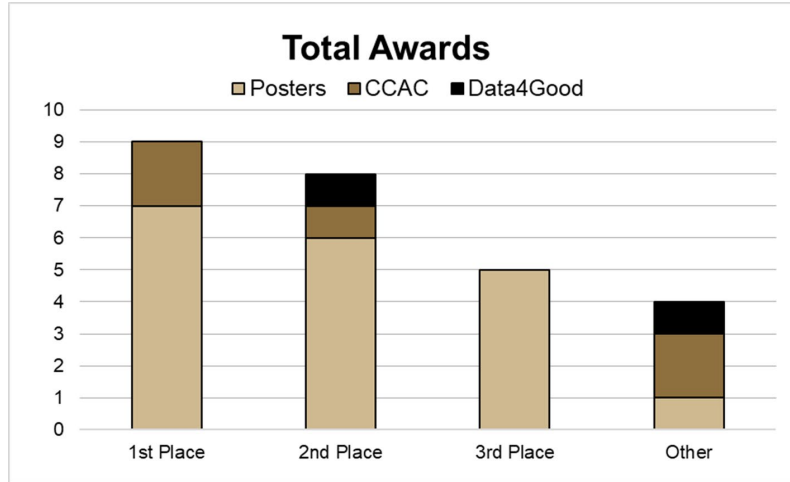
- Won first prize in a case competition for generating dynamic ticket pricing solution for the Indianapolis Colts
- Presented capstone project "A Novel Dynamic Ticket Pricing Approach for NFL Teams" at the INFORMS Business Analytics Conference



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<https://info.informs.org/acap-academic-pathway>

# "BEGIN WITH THE END IN MIND" - STEVEN COVEY

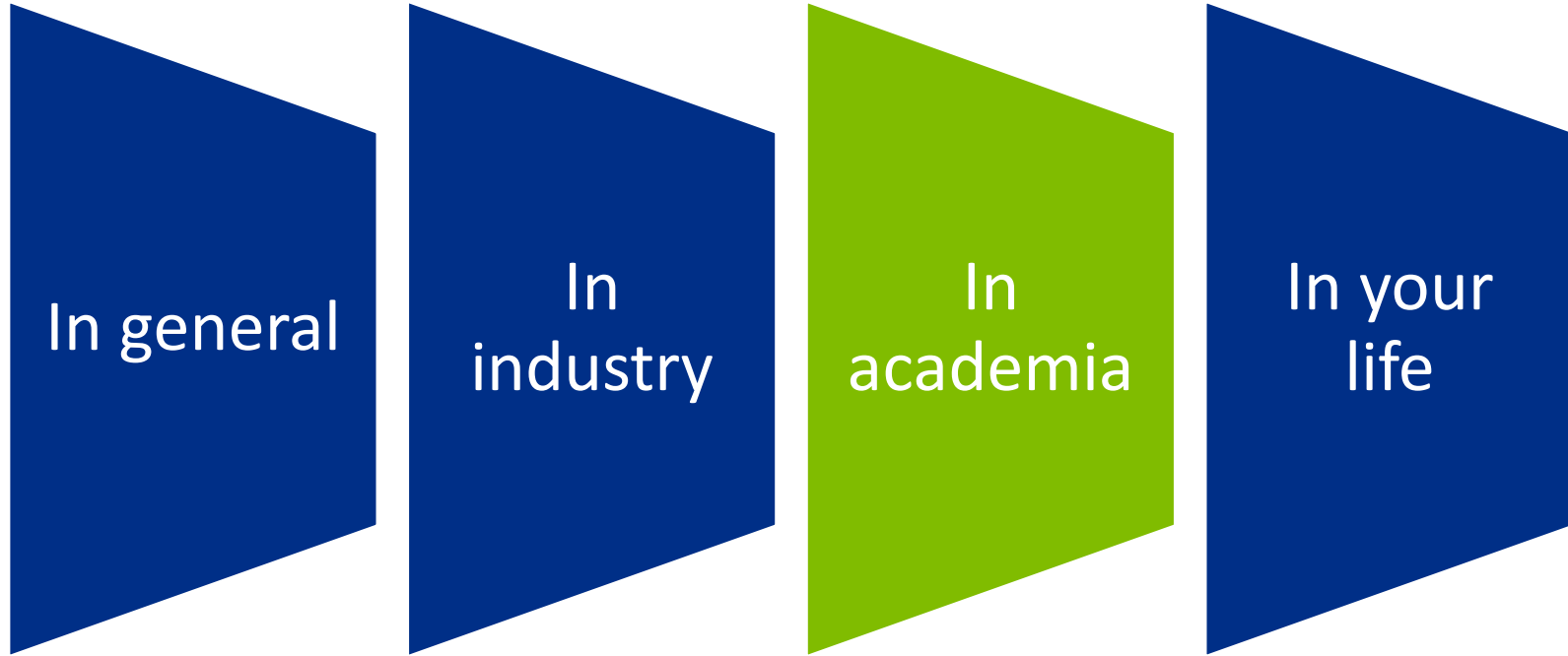


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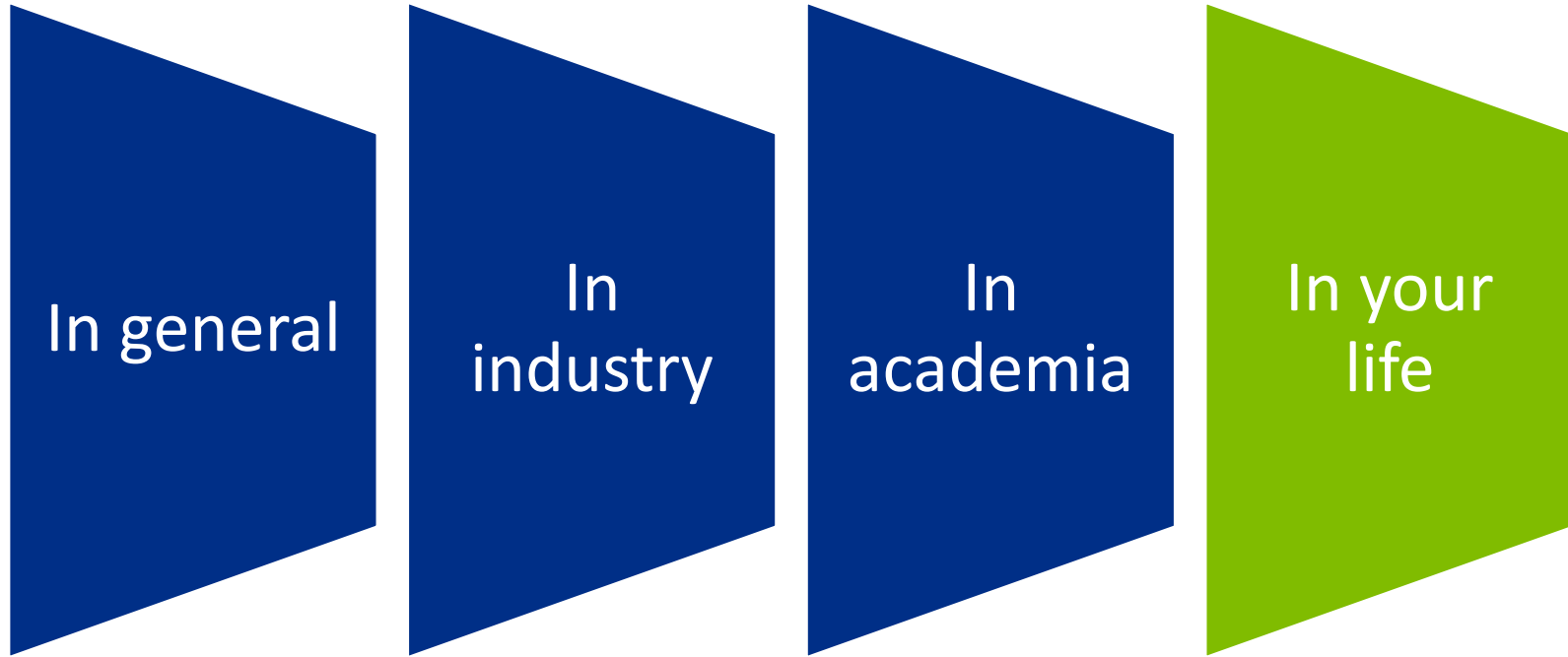
**100%**

Employment Rate  
Within 6 months of graduation

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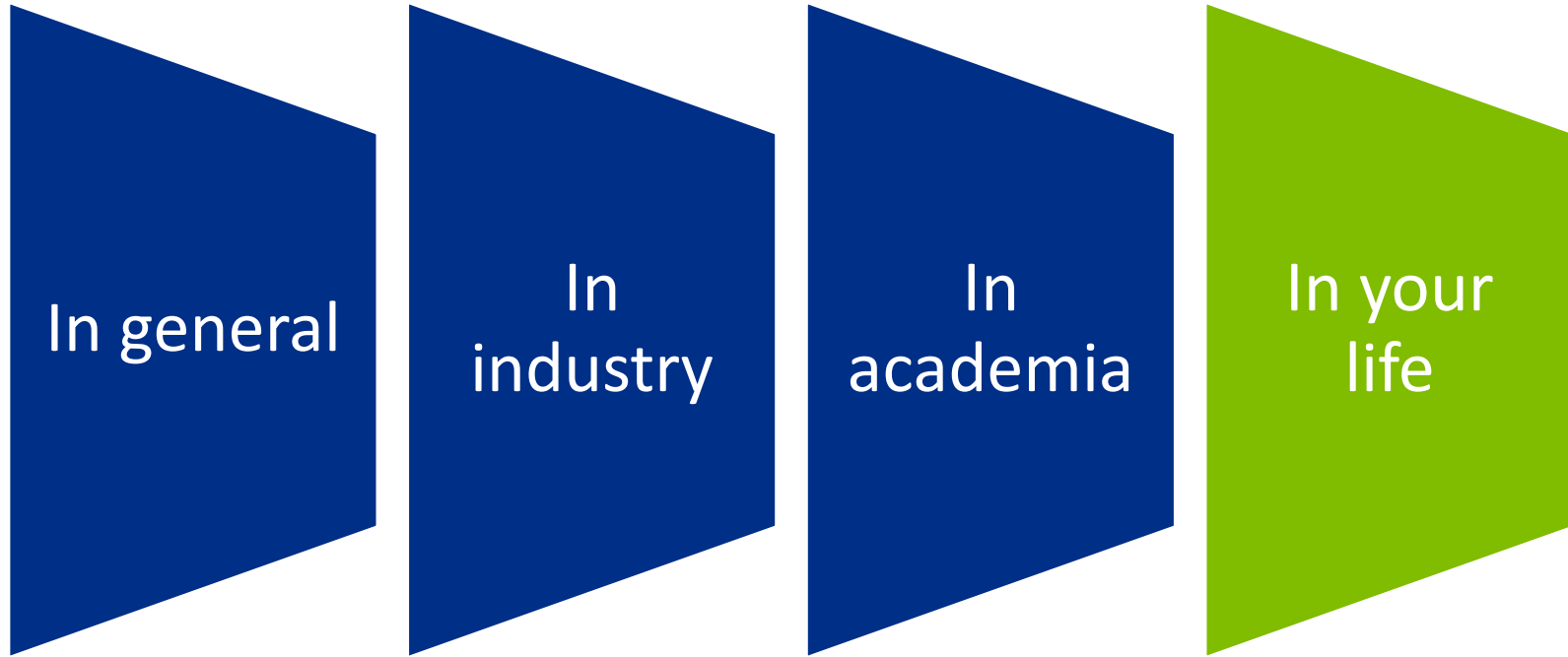
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